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# BFC ORIC ATARI COMMODORE IUPITER COLOURGENIE SINCLAIR DRAGON IYNX MICROPROFESSOR 

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## Briefly

Terminal Software has brought out a Commodore 64 game that two can play．Called Super Dogfight，it＇s a version of the ar－ cade game where you take part in a duel between two World War I air aces，and reatures a wraparound screen．
Terminal Soffware， 28 Church Lane，Prestwich，Manchester M2S 3 AJ

## －ロ

Seven Stars Publishing says its Gener－80 is one of the rastest assemblers running on a Z80 system．Now available for the Nascom range，the company says it runs at about 500 lines a second al 4 MHz ．It has a full－screen editor which checks lines for syn－ tax and label－definition errors as they are typed in and generates semi－assembled source code． Tape and manual cost $£ 9.95$ in－ cluding post．
Seven Stars Publishing． 15 Gloucester Ave，London NWI 7AU
ㅁ ロ

Thorn EMI＇s October software releases include two cartridges for the VIC－20 and two for the Atari $400 / 800$ ．For the VIC，there＇s Tank Commander and Mine Madness，which will sell for around £19．95．And for the Atari，Carnival Massacre and Killer Climb will cost around £24．95．
Thom EMI，Upper Saint Mar－ Jin＇s Lane，London WC2

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B \＆R＇s Power Cleaner surge sup－ pressor plug is ciamed to protect your computer equipment from $99 \%$ of mains power surges，and to reduce the interference from household equipment such as vacuum cleaners．Costing $£ 10$ ，it can be fitted instead of ant or－ dinary mains plug．
$B \& R$ ，Temple Fields，Harlow， Essex CM20 2RG
ㅁ ㅁ

Mikrogen is about to launch a bumper batch of 14 new action games for the Spectrum．They will include wargames，a graphics adventure called SAS Assault， and some family games including Darts and Knockout，a complex version of Shove Halfpenny．The 16 K games will cost 55.95 and the 48 K games $£ 6.95$ ．
Mikrogen， 1 Devonshire Cor－ tages，London Road，Bracknell， Berks RGI2 2 TG


News ．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． 5
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## NEW FREE <br> CATALOGUE <br> 24 PAGES OF SPECTRUM BEST $01-7898546$ SOFTWARE SUPERMARKET



Why is he looking so pleased？ Find out in our show report on pages 10 and 11


Just tew weeks after the Microdrive，Sinclair launches the Spectrum Interface 2．Our de－ tailed review ts on page 42


Tansoft：Meet the man behind the name on page 18


METAGALACTIC LLAMAS BATTLE AT THE EDGE OF TIME $\boldsymbol{*}$

A fast and original game for the unexpanded VIC. Challenging and colourful, with good sonics and a unique game action and design, this promises to be the most exciting new 3.5 K VIC game since the introduction of GRIDRUNNER nearly a year ago.

## LLAMSOFT!! Computer Software

## from fromt page



Peter Harding, Oric's sales boss
it they have got enough stock to meet demand. Basically it's a tidying-up operation."
Mr Muncaster said two or three software houses had seen samples because Oric was endeavouring to ensure existing sofiware would not be affected.

He said: "We don't want to give anyone any nasty surprises like Sir Clive did."

This was a reference to series three Spectrums which affected a few machine code programs rely-
| ing on unpublished reatures of the computer.

Oric's sales boss Peter Harding said the company would be launching a new computer in late spring. H would have a typewriterstyle keyboard and 64 K of RAM, 37 K useable in high-resolution mode and 47 K in standard mode.
He said: "It's going to be the Electron-Commodore 64 basher."

Oric's modem, costing £50-£70, was nearly finished and its 3 in disc drive would follow at about $£ 200$.
He believes that, following games, the next phase of computer sales in large numbers would be for uses like home banking, electronic mail, telesoftware and teleshopping.
Tansoft has now taken over Oric's mail order operation.

- Oric has been voted best home computer by a panel of 25 journalists in France - 35,000 have been sold there. The Spectrum needs an add-on to work on the French TV system; the Oric does nol. More than 70 per cent of Oric sales are overseas.
Oric Products International. Coworth Park, London Rd, Ascof, Berks SLS TSE


## Micro project wins award

A computerised golf driving system based around the BBC micro has won 16 -year-old Richard Mackman a prize in this year's Young Engineer for Britain competition.

As winner of the 16-17 year age group, Richard receives f 150 and a trip to Europe to see computers being used in industry.

Richard, who is a student at Garforth Comprehensive, Leeds, started the project last summer as

## From front page

and Good Housekeeping is part of the National Magazine Company which also publishes Cosmopolitan, Company, Harpers \& Queen and She.

Roger Barrett, who is publishing director of Ebury Software as well as a director of National Magazine, said: "There are more microcomputers in homes in the UK than anywhere else in the world.
"We believe that there is a big demand for quality software, and that's why the National Magazine Company has decided to move into the software market.
"Later programs will cover a wide range of subjects, and will be linked to our major publications."
National Magazine Company, 72 Broadwick Sireet, London WIV 2BP
part of his O-level Technology course.

He said: "Because the project was going to last a year, I wanted to do something that interested me. My two hobbies are golf and computers, so I though of an idea that brought them both together.
" 1 was really thrilled and surprised to win, because the other projects were so good."

Using network of sensors linked up to the BBC micro, Richard's system times the light of a gols ball from the tee into a practice net, and then calculates how far the ball went, the angle of the shot and the ball's initial velocity.
He wrote the entire conirol program himself, and did most of the design. Teachers helped him to construct the special circuits and computer interface.

Now he's proved that the basic idea of using a computer to calculate a golfball's trajectory can work, Richard hopes that a commercial company will develop the system further so that it could be used in golf training.

Richard himself will be kept pretty busy from now on doing five A-levels - in maths, further maths, physics, chemistry and general studies.

Eventually he hopes to either go into computing, or become a pilot.

## Bungled burglary

The bad news is that Micromega was burgled the other week - the good news is that the burglars didn't know what they were doing.
Manager Neil Hooper said: *They came in through an upslairs window. They ignored our expensive sofiware development system - and picked up a 48 K Spectrum, leaving behind the power supply.
"The police think they probably kids, but they can't have been computing kids or they'd have known what to take. If they'd had any taste, they'd have taken some copies of our latest program, Luna Crabs.
Micromega has now called in the security experts to make sure they don't have a second breakin.
Meanwhile, if you should conve across a 48 K Series 2 Spectrum, serial number 001-106604. minus a power supply, the Lavender Hill police would like to hear from you.
"The police think they were probably kids, but they can't
have been computing kids or they'd have known what to take. If they'd had any taste, they'd have taken some copies of our latest program, Luna Crabs.

## Seeling red and green

Silly Software is making its market dubut with a Dragon program that has what is probably the first ever 3D packaging.
Nestling in every cassette box is a pair of those red and green gog. gles, which cinema fans may remember from such films a They Came From Outer Space. Put the glasses on, and you should be able to see the cassette insert in three dimensions.

The program inself is called Movie Producer.
First you have to sell your script - and then the fun really begins.
Movie Producer has music, graphics, and according to Silly Software, "a theoretrical 25 billion levels of play."

All this for only $£ 7.95$,
Silly Soflware, of Thornhill, North Weald, Epping, Essex

## You could be on our pages

## We welcome programs articies and tips from our readers.

## PROGRAMS should if posslble, be computer printed to a wldth of 48 characters (use a new ribbon) and/or sent on cassette. Check carefully that they are bug-free. Inciude detaits of what your program does, how it works, variables you have used and hints on conversion.

ARTICLES on using home computers should be no longer than 2,000 words. Don't worry about your writing ability - just try to keep to the style in HCW. Articies most ilkely to be published will help our readers make better use of their micros by glving useful ideas, possibly with programming examples. We will convert any sketched hlustrations into finished artwork.
TIPS are short articies, and brief programming routines which we can put together with others. Your hints can aid other computer users.

## competitive rates are pald.

## Keep a copy of your submissions and include an SAE If you want them returned. Label everything clearty and olve a daytime and home phone number if you can.

Paul Liptrot, Home Computing weekly, 145 Charing Cross Road, London wC2H OdE

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## FOR THE DRAGON 32

FRec-HOP: This version of the popular arcade cis game uses $w / c$ and hi-res graphics $10 \%$ K for a fast moving gama. PRICE: | 7.75 |
| :--- | GALACTIC SWCAS: Sneaky, slimy, squamulous Cat creatures that will slime all over you if Ga you don'r shoot' 'em first. Machine code and hi- res. Price: $£ 7.75$

 FOR THE SPECTRUM MAX EOEE-ZOME: Reversi-withatwist! Will you save England, or blow ir to into little pieces? Fur graphics. ERse: 66,50 CHARACTER CENERATOR: A very Useful program that allows you to make your our A character. They can be saved, and used in your own games. Comes with instruction manual. DRICEE:E8. 45 cperprepperporepor FORTE ORIG 4 BK.
T-COMP: At last compiler, that will speed up your BASIC. program to near $\mathrm{m} / \mathrm{c}$ levels. An excellent introduction to compilers and machine code, $T$-Comp is complete with full instruction manual

Price: E12.95
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 Bee jonewen. Lance คVunumanunciunuunuen FOR THE TIIS9/4PA SARCASSO SEcTOR: You are ina space pod Any that is damaged beyond repair D- - all you can at is turn le pro anal all that's left' is revenge! Price: $£ 7.75$ MUSIC MACHINE: Play wound with Texas sound. This program uses the chords, and shows you which ones you'res using.' finished pieces of music can be saved ontrape and used in your own program. PRice: $\mathbf{5 7} 75$. NODRUB'S QUEST: A 3-D adventure game - rescue the Princess and avoid ByTE-SIze Mike; there's two parts to this graphic adventure.

Price: £8.is
For full catalogue please contact US (SAE appreciated) or the addresses above.
Access orders wekomed, otherwise please. enclose a cheque or Postal order.
Both Bamby Software and PCS, are members of the. Computer Track Association

# Laser Tank TI-99/4A (Extended BASIC) 10 

Not Polyoptics, from Stainless Software, 10 Alstone Road, Stockport, Cheshire SK4 SAH
Laser Tank provides a futuristic simulation of warfare as it would be seen from the turret of a CIREV - coherent infra-red equipped vehicle.

You have three such vehicles with which to destroy mother three controlled by the computer.

Each is located by adjusting
the altitude and position of your tank with respect to readings from radar and viden screens, and a bearing marker.
Once on video, the tank is
manoeuvred until your adversary is within range. Hopefully, when you open lire, the enemy will be destroyed, but pause to think about it and he may well attack first.
There are three levels of difficulty. The score given at the end of the game is based upon the skill level played, the number of tanks teft in your command and the lime taken to destroy the enemy.
Movements are controlled by either keyboard or joystick, the former being the more formidable as it allows left and right tracks so be sleered separately.
J.W.
instructions
playability 70\%
graphics
value for money
$65 \%$

# Alien cactivity on your micro 

## Read on for a rundown of some action games set in space

## zap T1-99/4A (Extended BASIC) E7.95

Byleware, Unit 25, Handyside Arcade, Newcastle upon Tyne NEI 4PZ

As its title suggests, this is ath arcade type game in which you zap aliens in order to survive.

The cursor keys control movement of sights which must be positioned on the aliens that fit across the sereen. The space bar is used to open lire.
The object is to destroy as many aliens as you can, before your ship's fuel tuns out. The fuel reserve is displiayed at the top of the screen and rapidly diminishes as the game progresses.

To completely destroy an alien the head must be hit, but hitting the body gains extra fuel. Adding to the difficulty of this, however, the aliens appear in pairs, one of which will act as a decoy as it cannot be destroyed. At the end of each game you are reminded of the ycore, but no best score is given, The action is extremely fast, and unless you're a whizz kid of the keyboard each game ends within a few minutes. If a selestion of skill levels were incorporaled into the program I would definitely find it more playable.
instructions playability graphies oncy \$. $\boldsymbol{n}$. value for money


## Cyelons Commodiore 64 plus Joystick E5.99 <br> Rabbit Soffware, 380 Siation

 Road, Harrow, Middx HAI SDE For me, the most impressive superb title sequencens was its with 'Star Wequence, complete and moving leters, theme music The whole pacts.fessional and packige had a protion to it, which wast presenta.
natched by its play value really sameship, armed round green carnon, and the idea is abultet down the purple saucers to shoor spianers withoul saucers and red the ensuing expiog caught in crashing into the explosions or

Several options are available, inciuding richochel pullets, (errain below, score rankings, ter-
five skill levels. Graph levels.
game suffers a lithle fressive, the variety and as such from lack of recommend it to sach I can only players.


## Androld Attack Atari 400/800 plus joystick E6.95

Blaby, Crossways House, Lutter. worth Road, Blaby, Leicester
Arcade-style action games need to be writien in mathine code This smooth exciting graphics. This game is ro exception, Writh some mosily in BASIC whough) the machine code (not enought on results are jerkily apparent on screen.

Android Atack has five levelis. All involve preventing a nuciear seactor from going critical. of a reactor lies at the heart of anchamber guarded withed with a
droids. You are armee laser.

Your mission? To blast your, way down to the choor allowing blast a hoie in the floor allowing water to flood in and cool the reactor, then blast your way out of the biasted place. points are awarded for detroving androids. every one deriroying androts, despalched of which must be despatched level. ofore going to the hex higher the Unsurprisingly, the the peril. Anlevel the greaier the peris. Androids multiply and shool ball
Android Altack fails to imm-
prove upan an alfeady hackneyed idea.

## instructions

playability
graphics
value for money


65\%
$25 \%$
$40 \%$
$60 \%$

## Astro Chuse Atari 400/800 32K E20

From most Atari mail order companies

An original idea for a space game? Yes. The earth is under altack again, this time from megamines closing in slowly.
If one touches the earth, the planet explodes with surprising ferocily and graphic subtleness.
Your shig patrols the galaxy bunting out megamines and avoiding or destroving the eight types of alien craft that harass you.
The screen is used as a window on to the piay area, and you have to keep running back fust 10 check a mine hasn't slipped through the net,

The galaxy background is stunning to say the least, the earth too - wilh America shown mainly,
There are graphical interludes after clearing seyeral shects of megamines, which show our triumphant bero returning to base - again some more brilliant graphics.
Thete are 32 levels which is guite enough. A good game. M.E.
instructions playability graphics value for money

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COMPUIER GAMES OW MINUTES
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## SHOW REPORT

# New games, new add-ons at the big show 

Teenaget Paul Holmes, who started computing two years ago with a 2X81, made his debut as Timescape.

He showed his first - and, so far, only - product a shoot-'em-up game called Wild West Hero, priced at $£ 5.90$ for the 48 K Spectrum.

But Paul, 16 and author of Spectrum Machine Code Made Easy, plans to bring out anew tape every three weeks.
Spanish company Indescomp showed jts range of add-ons for Sinclair computers, all housed in glossy black boxes.

They include typewriter-style keyboards for the Spectrum and ZX81 at $£ 42.95$ and £39.95, RAMpacks and imerfaces. The Domestic Controller ( $£ 37,75$ ) for the Spectrum has four outputs and imputs to control alarms, lights, healing and so on.

Two new speech units chattered away to visitors.

Currah's Microspeech, at $£ 29.95$ for the Spectrum with a free tape, works through the TV speaker, voices all the keys - so B says "bee", ENTER says "enter" - and uses allophones. This means "hello" is typed in as "he(11)(00)". Intonation is created by mixing upper and lowercase letters.

Type ' $n$ ' Talk, priced at £171.35 by Numul, connects to the RS-232 or RS432 printer port of any computer, although it was demonstrated on a BBC, It speaks any text using ASCII characters and delay, inflation and volume can be controlled.

Inside is a Votrax SCOIA speech chip, 280 processor, an 8 K EPROM and 2 K of RAM.
Bug-Byle showed Old Father Time, a graphic adventure for the 32 K BBC due out soon.
And Bubble Bus had a table football game for the Commodore 64, written by Nick Strange, 24, author of its pool program. It's called Kick Off, priced at $£ 5.95$ and uses two joysticks.
 from America by Audiogenic and should be here in three weeks. Four games for the Commodore 64 and one for the VIC-20 - called Teddy - are also due out soon.
Sinciair add-on specialist Basicure has produced Pericon B ( $£ 30.15$ ), a unit for the Spectrum with 24 -line output to drive relays.
With 28 more titles out, or due soon, Romik has programs for a total of 10 home computers, in-

> Once more HCW brings you a comprehensive show report. Paul Liptrot talked to the exhibitors and examined the new products at the PCW show
cluding newcomers like the Electron and the Commodore 64,

Richard Paul Turner's Interceplor Micros had four new Commodore 64 programs, with another this week, all priced at $£ 7$. There is also one each for the VIC-20 and Lymx and his first, Cuddly Cubert, for the Spectrum. Price: 55 .

Publishers were at the show in sirength. Interface has 14 new titles, John Wiley showed a new range and Heinemann had four new software titles for education.

Melboume House launched its High resolution User-friendly Real-time Games designer thank fully abbreviated to HURG

- which is due on sole at $£ 14.95$ for the Specirum, from the beginning of nexi month.
It was to be called the Games Designer, until Quicksilva brought out a program with that name (same price, too).

Gerry Rose, who parted with Romik und set up Phoenix, said his iwin-pack games gave top value at $£ 9.99$. Each pack is the size of a video cassette and contains two tapes, an arcade game and and adventure. The arcade game has to be cracked before you can play the adventure. The first, Death Mines of Sirus, for the Dragon, is out now and more follow in the next few weeks for the 64, VIC-20 and Spectrum.

Spanish Spectrum - Valle Carmona, in secretary at Madrid-based Indescomp, with her company's glossy black add-on keyboard


Microstation is a new $\mathbf{£ 7 . 5 0}$ product from Kelwood Computer Cuses designed to hold a ZX81 or Spectrum, along with cassette recorder, Microdrive and printer.

Kingsley TV says its modified Grundig sets give high definition for computers as well as switching back easily to programme viewing. A 14 in colour TV costs $£ 261$ or your own TV can be converted for $£ 50$, plus return carriage.

Virgin is adding 12 new games next month, bringing its total to 36. The new titles are for the Spectrum, Commodore 64 and Tl-99/4A.
Acom Computers played the Brandenburg concerto through mine BBC micros - each with three musical voices - to demonstrate its Econet network. The Electron was also on show.
A console for the Oric holds the computer along with a notepad, cassette recorder, pens and cassettes with space for a TV, In's by Express Computers (Rugby).
Crystal's three new games for the Spactrum include a tank batte cailed Rommel's Revenge
 out three tities, two for the 64 , and one for the VIC- 20 , plus 16 K , called Skramble, similar to the 64 version ( 17.95 ).

Microdeal brought out the second and third in its Dragon series featuring the Cuthbert character ( 88 each).

Pinball Arcade, at $£ 10.35$ for the BBC from Kansas, has six different tables from which to choose, "flippers" and controi over the ball firing spring.

Micro-Ald's French Abroad for the BBC ( $£ 7.95$ ) teaches and tests on one side of the tape and speaks the language on the other side. It includes an exchange rate section and sampie letters. Other languages are to follow.
As well ts bringing out new titles, Abrusco previewed Super Catcha Troopa, a Commodore 64 arcade ganae for $£ 7.50$, an enhanced version of its VIC-20 game. Also for the 64: Home Manager (tape $£ 12.50$, disc $£ 15$ ) and a spreadsheet called Abracalc ( (ape f25, disc f27.50).
Also from Melbourne House: five new books - including one on the Spectrum Microdrive and The Hobbil for the BBC and Commedore 64, with the Oric to follow soon from Tansoft. And the company says its Horace series for the Spectrum will soon be available for the Commodore 64, Dragon and VIC-20. Spec-

## SHOW REPORT

trum Computer Bridge (E8.95) is due ul mid-November.

Hamesufi's Jeff Minter showed his latest VIC. 20 game. Menagalactic Llamas Batule at the Edge of Time. The game, including its lengthy tille, fits into the VIC-20's standard $31 / 2 \mathrm{~K}$. And there was a demonstralion of Revenge of the Mutant Camels, for the Commodore 64 and planned for December release.
Fuller, whose FDS Keyboard is now avalable for the Spectrum, ZX81, Oric and Jupter Ace, has the Laser 2000 computer on sale for $\$ 3995$ umil November 1. The company's Amp-stick has speaker, amplifier and joysuck controller in one und for the Spectrum ( 1 1995)

Ten games for the Sharp 700 were launched by Kuma.
From Shards comes a 90 K graphic adventure - 11 loads in three parts - called Pentigrew's Dlary. It costs 57.95 and runs on the Dragon. Shards had three more new Dragon tutes and one for the BBC to teach maths
CDS, whth new tifles due for Spectrum and Orac later thus month. previewed the first of its educational range for the 48 K Spectrum, language programs to help with French and German al f5.95. Maths follows next month.

A 23 -year-old RAF techncian, Corporal Chris I ancasier, wrole Imagine's lavest VIC-20 game. Bewitched ( 25.50 ). The company's Arcadaa tutle ss benng launched shorly for the Commodore 64
sortek aulded to its range for the Oric and Spectrum and plans releases for the Electron and the Commodore 64, His new IS Compiler and FP Compiler, both for the Specirum, are 9995 and fil 1.95 respectively.

The first six of a range of educatonal programs - for the BBC, Spectrum and 64-is to be latanched by Pidot Suftware Cits: early next year, Managing director Kcivin Robinson said they would be for ssx-11-yeaf-olds with the emphasis on anvolvement.
Orye sofiware specialists Tansoft brought out two new games, ancluding Rat Splat ( $\mathbf{1} 795$ ) in which you have to chase a ral and thump it. Lntel Christsas Tansoft is selling the 16 K Oric by maul order ar a cut-price $\overline{E 79} 95$.
Dragon said that there were 26 new software tules for its computer and that the 64 K model would be ous th trud-November. Microcomputer Resources has a Prestel interface for the Dragon 32 to display green and black or whte and black. A Viewdata colour card is promised soon.

New tules from Sofispot for the BBC include a Christmas game called Beebaclaus ( $\mathbf{( 6 . 9 5 )}$

BBC Publications and Alari showed thenr new tultes, including Alarn's race game cartrodge, Pole Position ( $£ 29$ 99)

## Where to find 1hem

Tomescape, 8A Digby Rd, Sutton Coldfield. West Mudiands
Jndescomp, P Castellana, 179, I. Modrud 16 (phone for UK' slocksts 127931 as,
Currah, Groyshorp Industral Estate, Hartiepoof, Cleveland TS25 2DF
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Microcompuier Resources, / Branch Rd. Park Si lithore, St Albans,

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Softspot, 29 South Cres, Prisilewelt,
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## VIC－30 PROCRAM

## Your last chance to escape from the haunted

thus is the last part of Hallowe＇en and is similar to parts two and three in that there are 10 rooms But this tume there aren＇t any stairs 10 find－you must fust get out of the manston
Even if you massed the earlser parts，this listung will worh without the others
Hallowe＇en is a text adventure for the VIC－20 with an extra 3 h of RAM．You have several com－ mands＇

## Examine

Louk
Gro
Get
Drop
Shoul
teed
The information on where you are in the mansion is set out like this

HALLOWEEN
You are in a
darh ronn
VISIBLE EXITS．N W

| You can sec |
| :---: |
| Cat |
| Dog |

What now？
You then enter what you want to do next．For example，you could type＂Examine dog＂．If


Varimbles
I $3 \& R$ FOR loops
As all Cill
VMS your command
Ff1 to 30）flags
C（I in IU）what yout are carry
If to 2u）s where lite thangs are I $\$(1$ to $\mathbf{7 0})$ what tems there are No the number of items $\mathbf{N O}$ the room you are in
mansion

> Concluding our text adventure for the VIC－20．plus 3 K of extra RAM．Alan Blackham，who wrote Hallowe＇en，has made sure you can play this part even if you missed the last two issues of Home Computing Weekly
you wanted to 80 north you would type＂N＂and to find out what you are carrynn enter ＂Look．＂
It＇s a good idea to get a friend to type in lines $800-900$ or you will cearn how to escape．

## Hinks on conversion

Thus progrem should work on any micro with just a few altera－ t10n5．The POKEs are
POKE $3607 \%$ change terem colout
POKE 3637，I to 15 set volume POKE 36：74 to $\mathbf{3 6 5} 77$ sothd charinets
POKE 192．0 clear keyboard buffer
SYS 64802 thet computer

[^1]344 IF NTE（ ）－
342 IF Whe then 300

## VIC－20 PROGRAM

## A35 JF F＝TREN 解



 $8440070 \quad 9580$





556 coro 20
86 HEH

697 cosul seae 0070 20
995


9020 FOR［1 $\pi_{4} 10$
3030 FQR Ja17 70210
9048 POKE 36876，FOKE 26877 J
90.50 MEST J．

9060 POKE 36676－POKE 36977,1
ge78 RETURN


9420 0ЕTA LFAF－
4430 FOKE 36876 220

9440 PCKE 36876． 0
4490 REYHRTS


g512 PRINT＂${ }^{5}$



$30=\int \Omega=120$ P0 24

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*160 NATA EMI
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40,5 ET
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## OGLES For BEC／B

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OGBLE COMFETITIONS ARE FUNI
OGLE COMFETTTONS ARE FUN



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 another go The baty will bekat it itil frop is inaccu dif af atu a Dipe alreadytiaed but F as the dog son hand dyou which you，＇e poing to iose
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## EGחERT

## Por COMmOCOME ©

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Page 14 HOME COMPUTING WEEKLY 11 October 1983

## SOFTMAREREVIEWS

## Amazing games

## our reviewers found their way round a selection of maze games

## Magic Worm Spectruin E8．95

tendenhurst． 3 家 Alater Ruad． London N19 3AS
You＇re a worm movitg around the You＇reen，leaving a trall is you go The object is in catch targely 3 you move to gann bonus poinks， or to go sraight to the flasturs blucbatle to move on to the neal
slage saye there are fois of bue
Howe the
nowers to be enen for ponts，bue fowers to be enten lor pornct，of don＇t louch the white tocks or gixhs your ywn ithree，wes
The rexi staye is a thaze，alad fuess what＇s in there？More bive fuwers．If you manase this part the end

bolughess ph What hanmens thent I dall a do mat has metg Bot lis tar
Al fion betause nething was whizneg fround the wiect thuygh ！wssh a going to en on the game．wrons -11 becarne a hallense，and the only thimp thal realv eot me down wis the an realv got me down wased when furme rare aidl lves lat were displayed
One problet1－twhe whic withe the lape an out－al memors mestessage appeared，whils or course meant reloading the nape and sartinis again．

## invoruchars

риはsabl！！

vilue for money

## $\pm \leq t \geq$

## 30 mannted Hedges spectrum c 6.95

Mircomega，230－236 Lavender Hul，London SW＇1t 1HE
Another Pacman style game，but nome the less stal very excilng The mase appearing to be 3D The maze apprawh the edges and guwing arownd he edges Your and treayure shat appear colle gind treawe on the wa ariand the surcen whose jot is 10 protect their domas from miruders．
twinh he three lives．You also has have hiree defes． have a means of defince．ic ice－axe －urner al the milize this while the
 $\sqrt{ }$
turg white and run in ths umb Catchusy hem ai thou torce ndds borus posnts，and you of the adhem back to the cent maze to semalerislize maze to sematernime limut here There os lume fing ree will because your exe best the guar－ melh，so move fast the notmai duens now return to their normai beide．
There are five levels of chate which enable you to decide the speed al which the guardiant speed You may hold the yame muve you may ho en unange the keys of movement
keys of movernent good artade syle game Avens exery ade aton at becoming aduntive o Mct
hnstrucuons
piayabisty
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上 $4 \geq$ 女


[^2]Alunch hict
$7 /-99 / 0 \mathrm{n}$

Thust phts dertial ghosts







The ob ohe the wer hat
Trolted by maje is a merouse dulde
rols atwo fitaver or fowtich from the atho wotion opron







# Anyone for tennis? Just type in and serve 

Step out onto the Centre Court with my tennis game for the Dragon.
Scores for both players are displayed and the first to reach is points is the winner
There is a chorce of two speeds, fast and normal, obtasned by POKE command.s, so remember to turn the complater off to clear the memory.
Each time a point $1 s$ scored the game halts until you press the right joysticik button to serve

To make the game more thallenging, you could add a RND atement to the ball bounce
 sizes. And the number of ponsts needed to win coud be insreased for $\&$ longer game.

| Hints on converaton Dragon Batic is doxe to the Microsofil standard se fers is is very sask in convert for onther compaters |  |
| :---: | :---: |
|  |  |

## Your joystick is the racquet when you play this tennis game written for the Dragon by 14-year-old John williams



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$310 \mathrm{~F}=\mathrm{PEEK}(65280)$ I IF $F=126$ ON F=254 THEN GOTD 40 Elsers 310
 Rapmaveranbem
 THEN GOTOID ELSE 326

 CACCDEGA"
 HEN EOTOIO ESLET20
350 JF INKEY\&"N" THEN EMD ELSE 3AG 5000 PDKE EHFFDG, OR GDTD1G

10 CL8A!PRINT A13+32, "TENNIG":
11 PRINTEIO+96, "BY J. WILLIRA S":
12 PRINTOB+128, "FRST OF NORMOL ( $F /$ /N)
 14 IF INREYSU"N" THEN GOTOSOOO
15 IF INKEY="M TMEN GOTDIZELSE 16
16 DRINTEB +268 , "GRESE (G) TO BTART"
17 IF INKEY $=4$-G" THEN GOTO2O ELSE GOTOIT
20 SCRmo
$302=0$
40 CLSOTFORO. 2 TO 30 (SET(63, D, 2) ISET (O.0.2) TNEXTO
So DRINTEIJ+O, ""tenniE":
60 FOR R=0TO 63
TO SET(R, 2, 2)1SET\{R, 30, 2)1NEXTA
80 $\mathrm{E}=16 \mathrm{t}_{\mathrm{R}}=59$
$90 \mathrm{~B}=3$ 2D=14

110 日ET $($ R, $E, 5$ ! $\operatorname{EET}(R, E+1,5)$ !SET $(R, E+2,5)$
120 PRINTEZ ${ }^{2} 0$, SSR:IPRINTE27*0.:Z:


$140 \times 2=x_{1}+X_{1}: 1 F \quad \times 2=58$ AND $Y 2=E$ OR $\times 2=58$ ANND Y2=F + 1 GR $\times 2=5 B$ ANDY $2=E+2$ DF $\times 2=4$ ANDV2 $=D$ OR $\times 2=4$ AND $Y 2=0+1$ OR $\mathrm{X} 2=4$ AND YZ-D+2THEN XI=-XIIPLAY"DS 150 S เคAR"
150 GET (S, D, 2) ISET ( $\mathrm{S}, \mathrm{D}+1,2$ ) בSET $(5, \mathrm{D}+2,2$ )

(70 IF X2) 62 THEN 5CL= SCLZ 1 : GOT0300
1800 IF K2 2 2THEN $\mathrm{Z}=\mathrm{Z}+1$ : :GUT0300
190 IF SER=15 TMEN GOTO 330
LOO IF $2=15$ THEN EOTOS20
210 GOsurz7o

230 D=JF:IF D〈3 THEN DO3
240 IF D) 27 THEN D=27
250 1F E) 28 THEN $E=27$
 270 RESET (R, E): RESET (A, E+1): RESET (A, E+2)

290 RETURN
500 PL.AY"D3. GV3:ABGFEDC"
E., © 4, II postisens of right left Payers

- bril soore lor right lelis piayers

Throughout its short life, the Onc has been cursed by constant comparisons with the Spectum. So it's mevtable that Tansoft should find itself labclied as Onc's answer to Psion, the software house that has worked closely with Suclarr.

Though Tansoft and Onc Products are two completely separate companies, Once Products used to distribute all Tansoft's programs, like Sunclar distributes Psion's Tansoft wrore the demo program that goes out with every Orte machine, as Pston wrote the Horzons tape for the Spectrum.

Paul Kaufman, Tansoft's managing director, is quste happy for such comparisons to be made and freely admuts the Tansoft 15 trying to fultill Pston's role in the Onic market. Indeed, the ideas for some of ts forthcoming software releases come from Psion's software for the Spectrum
But it should be sand that Tansoft and Oric are starting to asser their separate adentites. Tansolit

# Tansoft: forging its own identity 

> Tansoft and Oric grew out of the same comany, Tangerine, and still work closely together. But as managing director Paul Kaufman explained to Candice Goodwin, the two are becoming increasingly independent


Cathie Burrell (left) and Paul Kgutman with Carolya (,roeneveld, Tansofl's graphic designer
is mereasingly taking over the distribution of its software, leaving Otic to concentrate on hardware. And according to Paul, there's no question of Orsc telling Tansoft what to do.
"There has to be give and take. Oric makes suggestions about the kind of software it would like to see; for example, they've jusi released a pruter, and they approached us to do a demo tape for that
"And we always listen to them opinion on our software, though we don't always take any norice - after ałt, they're hardware, nol software specualsts. For example, Oter thought our flight game was terrible becatise it wasn't like Psion's. But it's our best seller."

Tansoft originally gew oul of the Tansoft Gazette, a magazme for Tangertne machane users set up by Paul. Tangenne, of course, was the company that first developed the Oric.

The magazine itself was started
as part of the Tangerine customer services department which Paul joined the company to set up
"Prior to that". he sard, "I was a programmer at Shell for three years - I Just bought a Mtcrotan computer from Tangerine as a hobby. One day 1 went to a computer fars and mel someone from Tangerne told them ther custonter support was appallıng. A few weeks larer. they rang me up and offered me a job,"

The first programs Tansoft produced were for the Microran Then when the Oric came ouk, they started to concentrate on Oric software, as well as bringing out Otic Owner magazane which now ancorporates the old Tansoft Gazette.

When Tansofi separated from Tangerne and became a company unis own right, there was an election to decide who the drectors should be. "li was very democratic": satd Paul. He
became one of the durectors, and the other is Ca1he Bursell, who is in charge of admunstration and dealer contacts

The company currently has efght theles avalabie. By the end of the year, Paul hopes to have 25 Llımately, hts am is to sell 40 per cent games, 40 per cent ullittes and languages, and 20 per cent busmess software

A whole batch of new reteases is plantied for October. Among them are OricCalc, a spreadsheet program, Author, a word processor, a BASIC compiler and a version of the Pascal language Among the games is Ral Splat, which could be one of the most lasteless pieces of software yet developed

Says Paul: "You have a latte tman down a sewer, and he has to ktil rats by buting them woth a hammer or possoning therr with an aerosol of polson gas.
"But there's alsoa lot of cheese
down the sewer for the rats to eat, and the chease fumes can build up and kill the man. There are also monsters lurking in the tunnels. it's a really good game, with lols of sound effects."

Sounds lovely Paul is also keen to get into adventure games: "] thmk they"re gettmg more popular, especially with older people." One resuli of this is that I ansoft is now seiling an Orec verston of the best-selling Spectrom adventure game The Hobbit, specialty written for the company by Melboume Hosse,

Tansolt has also found a lot of interest in adventures from the Australian market. "We keep meaning to write an adveniure dame with kangaroos in it , just for them" said Paul
"We"d also love to gointo the educational market firstly when we understand it better ourselves and secondly when we have some good programs to sell." Tansott's first educalional offermigs, also due out in October, are a stries of tanguage-teaching programs developed by a docior of psychology at Swansea unuverstty

Though it won't be ready for the autumn. one of Tansofl's programmers 15 also working on a 3D graphiss program called Oric. CAD, which according to Paul will be "tour answer to Psion's VU-3D'3.

A lon of Tansoft's early programs were wrtiten by Paul, who also helped to develop the Oric uself - he worked on the sound commands which are ore of the machine's srong points in its battle wath the Spectrum. But the rapid expansion of Tansoft's business through the mereasing dertand for Oric software ( ${ }^{14}$ Just thus month we've sold 100,000 prograns ") leaves hith little tume for programmung now

Tansoft uses about five ryeclance programmers, not all of whom are teenage, thought Paul admats to poaching 17 -year-old Andy Green from Quicksilva and 17 -year-old John Marshall from PSS

Occasionally the company also uses submitted soltware, but as Paul says, "We get at least half a dozen tapes a day, most of which are rubbish or unuseable. We ges no end of copses of Mastermind and Cenllpede and Space Invaders. Some people even lype in listugs from magaznes and say they're thers own - I wouldn't mund so much, but sometimes they're from our own magazine."
"But we're now turming down a lot of soitware we might have accepted few montis ago. We'te trying to maise our standards all the ume. If people buy software and it's no good, they won't come back agam."


You are the Munchic trapped in a maze with two end Hoonos Escape ss impossible－your only amm is to survive

```
    OPDR A=0 TO 25s #
    3 POKE A+319*), PEEK (P+15615)
    4. NEXT A
    LET A=31531-256
    5 LET B=INT {A<255!
    7LET C=A-B 퓨ᄅS
    8 POKE 23GQठ,C; POKE 23昌方, 
    9 RESTORE 12
```



```
tuva*
    11 FOR P=1 TQ LEN A&*FORA B=O
```



```
    A(A) -32) + (0, C, NEXT B: NEXT A
```



```
&,c,c,c,ges,120,c,24,8,c,c,c,c,
5,125,24,55,124, 214,140,254,130
\54,170,5%,124, &54,146, 214, $54, ट
```











```
G,g+c,c,c+24,0,5,
    1% DA+向 32, 10,50,12?, c, c, 12E,
Q,是,2,20,34,33,&,9%,c,0,6,60,122
```



```
    10, RESGGCNESNAC,C,C,C
```




The Munchie is moved around the mraze using the cursor keys（\＄ 10 8）The Hoonos art car－ nivorous，so they must be avord－ ed－undes you can make your way to a power－star，which when eaten will guve you power over the Hoonos so you can cat them for a bonus of 5010 points But be warn－ ed＇The effects of a power star don＇t kast long

Once the dots below the Hoonos＇den are eaten，fruil will start appeanng at thes position and this car be munched for bonus points（ 100 points for pears and apples， 200 for chernes and 300 for iemons）．

The Hoonos also drop dynamile at random as the maze cfears，so avord this or you will lose a life

Doors at each side of the maze witl trarssport you 10 the other shde．

It would probably be best to enter and run the tirst 24 lines before entering the rest of the program The first eight lines restore the normal character set， then lines 9－15 poke the hores graphics on to the lower case let－ rers

All varables should be entered as upper case letters，or eise the listong will look strange．

All characters whthın PRINT statements or in the data at the

end of the program should not be entered in graphics mode，but should be entered as standard lowercase letters．

Lunes 19－24 POKE three machine code noises on to the graphics characters．Great care should be taken un entering the data；one wrong jtem could crash the system．

To tesi the noises，type RAND USR USR＂A＂，RAND USR USR＂E＂，RAND USR USR
＂${ }^{1}$＂



```
M
```




```
```

    LEN STRU (SC+EON%}; 5N+BON
    ```
```

    LEN STRU (SC+EON%}; 5N+BON
    a.%4 IF SC/GAMEEP2IO'THENGOTO
    a.%4 IF SC/GAMEEP2IO'THENGOTO
    2QS 工F INKEY隹岁" OR INKEY##"E"
    2QS 工F INKEY隹岁" OR INKEY##"E"
    THEN GO TO QSO
    ```
```

    THEN GO TO QSO
    ```
```




```
```

    e10 If INKEY悉="S** AND CHE{X,Y=1}
    ```
```

```
```

    e10 If INKEY悉="S** AND CHE{X,Y=1}
    ```
```








```
232 TF RNDJR THENNOO SUB 500
```

```
232 TF RNDJR THENNOO SUB 500
```












```
        THEN LET EON
```

        THEN LET EON
        THEN LET EON
        THEN LET EON
                        THEN LET BON
                        THEN LET BON
        24 IF C* (X,Y)="U" THEN LET OGN
    ```
        24 IF C* (X,Y)="U" THEN LET OGN
```






```
        X2,Y%;悉(X2,Y方
```

        X2,Y%;悉(X2,Y方
    m&t if Y=1 fMEN LET Y =10
    m&t if Y=1 fMEN LET Y =10
    2BS PRTNT
    ```
    2BS PRTNT
```




```
    GND YSZY) THENGDO SUB BgRET&(PEXI
```

```
    GND YSZY) THENGDO SUB BgRET&(PEXI
```

 AND X $\times \times 1$ ）$=$（C $\times<\times 1\}$
 320 LET YZ＝Y





를 IRIMT AT $\times, Y$ INK $5: 8$
 33 PRINT RT $\times 1, Y 1$ INK $2+4$ IR AN
 P＝0）©

PND Y（2F）THEN 50 Su $1000+(100$ $\because$ ？
34 IF IF Pゅ，THEN WEXT $Z$
 0 BR

## 355 GO TO ？0

400 PRINT AT $18,11, Z \%$ FOR $A=1$ TO P：RANDOMIZE USR USR ivE＂NETEX

 SDS IF C（ 15,11 ）\＆ 3 ＂＂THEN RETU RN 응표 F F＝B THEN RETURN

 S2B RETURN
G日G IF RND＝ 5 RND $C$ 事（X1，Yは）＝＂＂


 Y2）＝＂世＂RETURN
G2日 ロET゙リスM
1008 PAUSE 50：FOR R＝1 TO B：PRI NT INK AKFT X，Y゙＂\＃＂：RANDOMIIE U


[^3]\[

$$
\begin{aligned}
& \text { R USR *A* NEXT R; PRINT मI, AT } \\
& \text { 6 } \\
& \text { SQ18 IF SC+BOM>HI THEN LET MI=SC } \\
& \text { +80N OOTO } 40 \\
& \text { GQ日G DATA "iffiffifffffffffiffic } \\
& \text { goni DRTA "frkffrefrererfrifkrf }
\end{aligned}
$$
\]

$$
\begin{aligned}
& \text { GQQ3 DGTR "ifrefrrifrrifrefrerf } \\
& \text { G日Q4 DATA "ifrifriffrififrifrif: }
\end{aligned}
$$

$$
\begin{aligned}
& \text { gage DATR "friciffrerrerffiffrf: }
\end{aligned}
$$

$$
\begin{aligned}
& \text { 900日 DATA "frfrifirrerfrfriffrif. }
\end{aligned}
$$

$$
\begin{aligned}
& \text { gait DATA "frrfrrirff frifrfrrf" } \\
& \text { G日12 DATA "iffrfffrf friffrif } \\
& \text { G14 DATA *irfrrrirf frifrerfri: }
\end{aligned}
$$

$$
\begin{aligned}
& \text { Q日ig DATA "frkrfrrfrririrfirkrf } \\
& \text { 9요 SPUE "MUNCHIE" LINE } 1
\end{aligned}
$$

## MUNCHIE \＆THE HOONOS





## To all purchasers of Sinclair

 Small Business Accounts for ZX SpectrumIt has come to our attention that there is an error in some copies of the above program．We are anxious to minimise the inconvenience to purchasers and are therefore taking prompt action to inform you and offer a replacement free of charge．
If you have a copy of this program and it bears the code $B 6 / S$ on the box spine please store any data on a separate cassette and then retum the product with its packaging and user manual and your name and addreas to：

## Sinclair Research Ltd， Stanhope Road， Camberley， Surrey，GU15 3PS．

We will send you a replacement copy
－The Simulation and Educntion Peoplen
and now for something completely different．．． TITRE
Sensational titration simulation！Yes，titrate on your SPECTRUM．Complete whth screen display of apparatus，all indicstor colour changes，burette control，and warming of end－point．Choice of concentration and 10 indicators．Plus manual． Jilre（ 16 ／48k） 5495
Tifre（ 48 h ） E 850 complete with 3 extra programs． pH plots，worksheet and indicalor file．

5．l e．for complete catalogue
Trade and export enquiries welcome
WAMTEID：Those completely differenil programs．Send samples for prompt evaluation．Excellent royaltes．

G．DOLVIN ROAD，TAVISTOCK，PI．IS FA


## TI-99/4AFROORAM

Ktten Kong, a j0-foot-high mutant tabby, is playing cat-andmouse with a distressed damsel

You must go to the rescue by running along gerders and up ladders, jumpung over the gaps If you miss your footing or run off the end of a girder, you plunge to your death

You move left and right usting the S and D keys. Use E to go up a ladder or flemp, depending on whether a ladder is above you or not. And use X so go down a tadder or stay 51ill, depending on whether there's a ladder.

You get 10 points for reachung the damsel, and may gaun extra points if you jump and reach the Is.

From ame to tume Kong leaps into the ar to scare you, and it you are on one of the top two levels of garder then you wald lall off.
If you manage to rescue the damsel this time then there's another level wating for you with one piece of girder mussing


# Fend off the ferocious feline 

> When a cuddly kitten turns into a marauding monster, you can't just stand there and let a damsel in distress be turned Into cat food. Paul Edwards explains the rescue plan for his strangely familiar game, written for the TI-99/4A plus Extentpol Easic



450 CALL VCHAR $13,17,104, ~=1$
460 CALL YCHPR（13，ごす， 1 14，シ
470 CALL YCHAR $16,9,104,33$
480 CALL VCHAR く16っご1：104っこ
490 CRLL VCHFR（ $19,15,104,3$
500 CRLL VCHAR $<19,26,104, \vdots$
510 CALL HCHAR $(5: 16,128):$ CALL HCHAR（5，17：129）：CALL HCHAR E． 1
6，130）：CALL HCHAR（6，17，131．
520 CALL HCHAR $(8,14,137):$ ：CHLL
HCHAR（8， 20,137$):$ ：CRLL HCHRR（11，
13，137）：CALL HCHFR（11，E2，137）
530 CHLL HCHAR（14，8：137）：$:$ CRLL
HCHAR（14，25，137）：CALL HCHAF：17
：12，137）： $\mathrm{CALL} \operatorname{HCHAR}(17,18: 137)$
540 CALL HCHFR $(20,10,137):$ CFLL HCHAR（20，23，137）
$550 \mathrm{PR}, \mathrm{R}=21$ ：： $\mathrm{PC}, \mathrm{C}=1$ ：：$M 1=98:$ ：M2＝99 ：：DC＝15 ：：DD＝1：：CCH＝ －
560 IF RND． 05 THEN 640
570 CALL HCHAR（5：16，32，2）：：CALL HCHAR（ $6,16,32,2$ ）
580 CRLL $\operatorname{HCHAR}(4,16,128):$ CALL
HCHRR $(4,17,129):$ ：CALL HCHAR $(5,1$
6：130）：CALL HCHAR $(5,17,131)$
590 CALL HCHAR $(4,16932,2):$ CALL HCHAR（5，16，32， 2 ）
600 CALL $\operatorname{HCHAR}(5,16,128):$ CHLL
HCHAR（ $5,17,129$ ）：CRLL HCHAR $\langle 6,1$
6，130）：CRLL HCHAR（6，17，131）
610 CALL SDUND（ $500,-5,0,110,0)$
620 CALL HCHFR（4：1E，1E゙4のジ
630 IF $R=6$ ロR $R=3$ THEN 1 O゙心
640 CALL HCHAR（R，C，M1）：$: ~ D I S F L A Y ~$
AT（1：1）：＂SCDRE ：－＂：SC
650 CALL HOHAR $\because$, IIN，Зご
 8 THEN ITI＝－III
67）CHLL HCHAF $2, D G, 1$ E
68 ！ $\mathrm{FF}=\mathrm{F}$ ：： $\mathrm{FG}=$
690 EFLL ：EYUH•1，

：：$\ddagger=\overrightarrow{\mathrm{F}}$
710 IF K＝E THEN $\mathrm{C}=\mathrm{C}+1: 1 \mathrm{H}=\mathrm{A}$
：1 $14=99$


1 ELSE IF M1＝4 THEN $=\begin{gathered}+1\end{gathered}$
ア30 IF $=0$ THEA $\mathrm{C}=\mathrm{E}_{\mathrm{L}} \mathrm{E}$ IF $=$－ 3 THEM $5=1$
74！MLL GHAF Fin：－－H
TS IF IH＝1EG THEN $\therefore$ E E IF IF
 －TC 1170
FEO CALL HCHAR FPR FC：ELH，
 $\therefore$ OHLL GOHAP（ $\mathrm{F}+1, \mathrm{C}$ ；D）：：IF $\mathrm{I}=3$ $\therefore$ THEN 1 EOD
OE IF $=6$ THEN GEO ELSE 550
800 CALL ECHFR（F－1，I，If：：IF $\mathrm{I}=1$ 04 THEN G1
 ：GDTR 5日，
GEOTLL ECHAR（R－1． $\mathrm{E}-1, \mathrm{I}$
50 IF $\square=13$ THEK $\mathrm{St}=\mathrm{OL}+1$ ：CPL

E4 IF NHE THEN TALL GCHRER
 HCHAR＇F－1， $0-1$ ，ME＇：：CHLL HCHAE
 $1: 15=[-$ E

Esi IF II＝15i THEN SOCL


ミアO IF $11=93$ THEN LHLL GIHAF RM




EGOLLH－E
GODIGLL GCHPR（R＋1，C，D）：IF D＝亏 2 THEN 1020
900 GUTD 560
910 FDR RR＝F TD R－2 STEP -1
צ20 CALL HCHRF（RR，C： 1 Hi4）：：CHLL HCHAR（FR－1； $\mathrm{C}, 100$ ）
930 NEKT RR
$940 \mathrm{R}=\mathrm{R}-3: \mathrm{CCH}=3 \mathrm{~B}$
950 GUTD 560
960 CRLL GCHPR（R $+1, I$, II
971 IF $D<104$ THEN ELH＝玉 ：：GUT

## [ 560

980 CALL HCHAR (R,C:32)
$990 \mathrm{FDR} \mathrm{FR}=\mathrm{R}+1 \mathrm{TD} \mathrm{R}+3$ : CALL HC HAR (RR:C,100): CALL HCHFR (RR:C: 104): : NEXT RR
$1000 \mathrm{R}=\mathrm{R}+3$ : : CCH=104
1010 GTTD 560
1020 CALL HCHAR (R,C,32)
1030 CRLL SFRITE (\#1,M1, 12,R*8, C* 8-8,10, 0 )
1040 CALL PDSITIUN(\#1,Y, X): $:$ IF Y < 560 THEN 1040
1050 CALL MDTIDN(\#1,0,0): CALL PRTTERN(\#1,101)
1060 FOR $Q=400$ T0 200 STEP -10 : : CALL SDUND $\{-100, Q, 0):$ : NEXT Q 1070 GロTD 1190
1080 FOR $2=200 \mathrm{TO} 400 \mathrm{STEP} 10:$
CHLL SDUND ( $-100,0,0):$ NEXT 0
$1090 \mathrm{SC=SC}+10$
$1100 Y=I N T(R N L \div 13)+9:: \quad:=I N T(R N$
 <br> \section*{ANIROG <br> \section*{ANIROG SOFTWARE} SOFTWARE}




Flome send mo by retum of post. Cansetty 50 at CS 95 per Tapo

## SOFTWAREMEIEIWE

## Light Cycle ORIC-I E6.95

PSS, 452 Stoney Stanton Road, Coventry CVo 5DG

The object of thes game is to ride your laser crite art widd the yamte grid, keaving in yow wake a soldd laser wall

Yole appor crit, human ar camputitr also reaves a a m lar wast, and it etrher of you hw any object on the gerd then you "De
 display.
the whole program is very well presented, giving that all umportant arcade qualty.
There is plenty of sound, tmpteveve sfaphow, a hall of farte
 tolume teatrol Th, lasl
 Tht りris dantes, evper als in
view of the Ortc's rather lonod sound!
Inmertinem are slear and ton) urse, and the comirol keys (tup town, lett, reght and power boost tye well posiltoned fem tenth pavers or for faser aga 7 st compler

The gaine uself has good graptics, and on the mbless of its tine skill levels 5 very fast in deed It is erer adatatibe and one of the tew arside aciton grimes that cat be piayed bs puere than one person.
Al $n$ alt, a giatic that offers very sood, all round value for money.

MC .
instructions
754 playability $80 \%$ ETatith talue for moncy

## 

# On your lighe bike... 

> Or your computerised car. Our reviewers test-drive some games on two wheels and four

## Grid-Run and pontoon 48K Spectrum E5.50

Arcade, Technolagy House, 32 Chustehursi Road. Orpsngton, Kent BR6 ODG

No. Grad Rab bs not a vermon of Giridrumner, The object is to avoid a racing car that is moving

 gials in the wall the onitsing cat lave oft i vimpo istble ts reterse se whith trete is ma cht betwith behur end allid atll
 coltate
Prow are ared by rumb

IIIc ix II , Has sed whk thake lisa tert pexy katic Pontoon tacks challense
hetalse wo milish depends on eblapze, bul there is a guod graphtall represen a ton al cath taid and कi nur is uncd throughoul. A tally of the results 4 kept.

Phrases such as "are you aty ing to let me win?" acd interest but they soon beconte preds able

The computer sharts each time someone will have to teath il some mannerst and sthough its lirst two cards are hidjen ant LhtuCy KmI . Itw atr d vilated
 0 Mitike do waskill $A$ gerno th is

Pall is
(14)
as for thew
A
$10 \%$
$0.10 \%$
$-85 \%$
$450 \%$

## *中ncirvminet 32K BEE E7.95

Superior<br>

Ohe nf the ten war dta ale gatr
tor the bite the
 dwedeng At mors hike trat
 en a elimati il men to pass over A smokestien ink for pobls



 Jiac a chich tor y tarler

 response is ourctectively, Key morh and purck, moverfent is comorh and fast as movement is code can produce. 1 sifosed the perin
and resuled toth 4re bers math
 Herdinle Patman whang cilars teyiand - pult ir meets lirimat Six skin wherat Hare cillecolis It whersace pratecoll






## Motor Manits

 commodore 68 joystick E8. 95Audiogern
Readrig \$3erk
1 an sall atmesw what the hart Ith rabber abld the havery ratha of in Whisar tiama rant cil realaik and exning rate tal Rafle whith tind and allethe Erapliow ald
 ou lish rutwel pate wimpel pathers shatres and soare vor in dratur On the let1, ia Erdpu display of the road showh vour car positioned at a yarder and a hight rouch of the yo tt off down the track. of hazards
with ess pathotes, which cause wit 10 3kst, broken wlass, whech - 1. Pathelare st whe logs wheth will pacree bels Tabuter and with more withe ne probson tou
 shatalitity halsole bat te All here hyswis 6ity to avolded with skifut den and the $\pi_{i}$ and dieles a bull wath wath line - The deatl in the Eathe The devil wn that gaticen amantig tuti wan or ferneric as can spare tives rimblar ch
D. 1 - 850
tr man

## Lightcycles BBC B E6.95

Biteware. Lint 25, Handyside Arade Newcastle itpon Tyare M + + 4 )

Onte wl the mand erromeorls uxed loph fromt 1 tuan is the serice wist the laghtwe cy utcaking abrows the xietin Hea d : Itam lidu that thrs guthe tathev is natrie to won: Hgnit a nrw era $n$
 rital has of he Ealle , at ihd Intouric Nraprap beser thelew I m sure or all peaplic "I get lox ot lay rivi ' tram he deytroarg le fetr
 he lous acys viese dgetact scheme
Hetnwhive the purvalme chlev

In therr out vaph wl rs
 Wraptrap you try and oul manocuvre the compuler, hure
 troub e abs let the somputer , rap sill
The oppourg cise es merease





 alcheret: bixa all Howcer ned Mi falums he hex I thi dd.tulle 74 6. 6
$\qquad$




## ATAM $400 \mathrm{NDOPREC:AM}$

## Vou＇re on the trail of a damsel in distress



In thus game you play the role of a gallant knight with a masson to rescue is damsel who was 1 m － prosoned in a matze by a whatad

Funding the damsel is only one of your problems．Along the was you must dodge two hideous， flesh eatmg beasts who will devour both you and the darnsed If they can．Look out for ther trails and keep out of ther way－ these beasts are indestructible un－ til the damsel has been found．

Once you＇ve found the dansel you must go back and kill the beasts，using a limited number of spears you have strapped to your back．


> There are some nasty hazards to be overcome before you can save the damsel in David Ryan＇s game for the Atari 400 or 800 ， plus one Joystick

```
5 GRAPHICS 2+16
? GOSUB 19000
8 OIM RS(37*38),B$(17)
9 GOTO }900
10.POSITION 0,0:? WG;" PLFASE HAIT 50 SE
C. *:M6=0:S工36: B0=0: 仿=0: B5=0: B6=0
15 FOR A=39 T0 (37*37)-1:IF RNDK 0)>0.95
THEN A** }A,A)="Q":NEXT A&GOTO 2G
17 AS (A,A)=" m =NEXT A
```




```
37.37*37 ==!"
40 FOR }A=1\mathrm{ TO 37:FOR R=1 TO 34 STEP 4:IF
    INT(RNDKOC)*4 )+1=3 THEN NEXT R:NKEXT A:G0
TO 60
50 AS 37*R+R,37*Q+R )="1*:NEXT R:NEXT A
60 FOR R=1 TO 36:FOR R=1 TO 33 STEP 4:IF
    INT(RNDX ()* 4 + i=3 THEW NEXT R:NEXT R:GO
T0 134
70 As(R来37+月,R*37+月)="!"ENEXT R=NEXT A
130 A=INT(RNDM (0)37*37)+37:1F AS R,A)="
- THEN AS( A,A )=" (": EP=A: BOTO 160
150 GOTO 134
150 R=1NT(R*D(0)*37*37)+37:IF A& (A,A)="
- THEN M=A:GOTO 176
165 GOTO 150
179 A=INT< RND(0)*37*37)+37:IF A*(A.A)=*
THEN FON }A=A)=",":B1={1:G0TO 175
171 EOTO 170
```



```
\775 A=INT(RND(0) #37*$37)+37:IF R&( IF
176 GOTO 175
180 A=INT(RND(9)& 37*37)+37:IF AS(A,A)=*
    THEN AH5 A,F)=4K
150 EOTO 180
192 FOR Q=1 TO 2:FOR D=80 TO 6 STEP -1:S
OUND G,H,10,1U:NEXT P:NEXT Q
193 FOR Q=200 TO & STEP -4:SOUHD 0.A.10.
1ल:NEXT A
197 GOSUB 8000
199 COLOK 29:PLOT 9.4
200 SETCOLOR 0,3,6:SETCOLOR 1,10,10: SETC
OLOR 2,1,8:SETCOLOR 3.6,8
203 E0SUB 7500
20560TO 6eva
207 SOUND 0.0.0.0
208 G0S45 7003
210 POSITION 8,3:7 籼;尔(险-38, 1F-36)
```




```
230 POSITION 8,5:? *S;PN( (%+36,M+38)
```

|  |
| :---: |
|  <br>  for Gidd be＇tris <br> M，WI man poss．wans in the s．file tPexit protion <br> ［17（litllixa whil on <br>  <br>  <br> BI）w tint of teik veath <br> She fol．twillg bartabyes are un <br>  <br>  MF medden te dot illow manto <br> the ex 1 <br>  Whe mataten has leen fonit ald <br>  <br>  <br>  |
|  |  |
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|  |  |
|  |  |

Only once both beasts are dead can you lead the damsel out of the maze．Your trall of coins will change to a chain of small crosses whech she will follow－but you＇ll have to hurry，otherwise she may slarve to death before you get there

And that＇s not all In the maze are pits you must avord or you fall to your death．You can knock some of the maze wails down wilh your spear－but some are in－ destruclable
And though you＇re given in－ formation about your postion in the maze relative to the damse and the exut，this information is only approxumate．As you get nearer your goal，the wizard changes the read－out so as to con－ fuse your and throw you off the track
［lic joystrck plugs nno port ］ （far left）at the front of the com－ puter．It moves the man one spae north，south，east or west each tyme．
To throw a spear，bit the fire bution and wat for the man on the screen to go dark green．To aim a spear push the joystick on the direction required，as above To cancel thus option wathoul throwing a spear hit the space bar
For the more expersenced player the oplion for the walts has been given．In this mode of play the game becomes very frustratutg


## ATARI $400 / 800$ PROGRAM

295 IF STRIEX 0 ＝ 0 THEN SETCOLOR 1，10．6：6 OSLB 3untic
297 SETCULOR 1．10．1D
298 IF S〈（2－GD）AND BOK〉2 THEN 9500
299 FOR E＝1 TO 20：NEXT E
390 JS＝STICK（G）EIF $\mathrm{JS}=15$ THEN 203
310 IF JS＝11 THEN M1二⿰忄⿰㇒⿻二丨冂刂 1
320 IF $\mathrm{S}=7$ THEN $\mathrm{m} 1=7+1$
3．30 IF $\mathrm{J}=14$ THEN M1＝？ $\mathrm{H}=3$ ？
340 IF $\mathrm{JS}=13$ THEN M1＝1H＋37
350 SOUND $0,200,10,10$




440 IF FSK $(M 1, M 1)=*$（！THEN 1360
 5000：G0TO 490
480 AS $(M, M)=*>* M=n 1:$ E0SUB 5000
49 P P（DP，DP ）＝＂K＂\＆GOTO 20 ？
$5 E 0$ FOR $A=1$ TO 255 STEP $4: S O U N D ~ 0, A, 10,8$
：NEXT PEFOR R＝15 TO STEP－ $1:$ SOUND 0.10 0．10．RENEXT R－
533 POSITION 6,0
540 Bt＝4 man fell in Pit u

599 FOR $R=1$ TO 200：NEXT R＝EOTO 2000
690 FGR A＝ 255 TO 1 STEF－3：SOUND 0，A，10，
10：SOUND 1 ，ARS $(\beta-256), 10,10:$ NEXT A：SOUND
$0,0,0,6: 50 u m 01,0,0,6: M 6=1: M 1=19$
620 IF BOX）2 THEN MF＝9：GOTO 200
$630 \mathrm{MF}=1: 60 \mathrm{~T}_{0} 206$
1300 IF THF PNO BO＝2 THEN 1500
1310 M1 $=$ F $=$ GOT0 20 ？
1500 SOUNB 0，0，0，0：S0UND $1,0,0,0$
1518 POSITION 6．8：？标＂）
15：26 FOR K＝1 TO 255：SOUND O．K，10，10：SOUN D $1,256-K, 16,10: 504 N 02, K, 8,16: 501403,2$ 56－K，8，10
1539 POSITION 2．3＊？＂6；＂congratulations＂ 1540 POSITION 8，E：？6；＂YOU＂：POSITION 2. B：？${ }^{6}$ ；Hawe rescued the：
1559 PGSITION 7，10：？＂6；＂dansel＂：潅XT K： SOLND 0．0．0．0：SOMNO 1，0．0，0：SOUND 2．0．0， 0：SOUH $3,0,0,6$
2000 POSITION 6，0：？䉼；＂）＂：J＝6
2010 POSITTON 1，2：？ $65^{\prime \prime}$＇select＇to cmoo se＂：POSITION 1－3：？6；＂＇start：to begin＂ 2020 POSITION 1：8：7 65＂ 1 －normalesp0S ITION 1，7：？＊6s＂ 2 －imusible mals＂
2038 1F PEEK（53279） 5 THEN $J=J+1: I F J=8$
חTV 子e

2059 FOR R＝1 TO 30：NEXT R：IF PEEK（53279） $=6$ THEN 2060
2055 G0TO 2200
2060 IF $5=7$ THEN 2080
2070 RESTORE ：REFD D：FOR R二8 TO 15：RERD D：POKE NHR，D：NEXT REGOTO 26S9
2080 FCR R＝8 TO 15：POKE N＋R，B＊NEXT R

2999 EOTO 10
3000 IF PEEK（754）＝33 THEN POKE 764．255：R ETURN
3020 － $5=5 T I C K(0): I F \quad N=15$ OR $\mathrm{JS}=10$ OR N $=6$ DR JS＝9 OR JS $=5$ THEN 3080
$3025 \mathrm{~S}=\mathrm{S}-1$ I IF $\mathrm{S}=-1$ PND BD＝2 THEN RETURN 3027 IF S＜BD AND BDK＞2 THEN 9560
3030 IF $\mathrm{J}=13$ THEN DIR $=37$

3049 IF $ل$
3059 IF لS $=11$ THEN DIR $=-1$
3269 IF $ل \mathrm{~S}=7$ THEN DIR＝1
3035 MIR＝DIR
3970 FOR K＝1 TO INT（ RADK（0）＊10） 27



31．10 MIR＝DIR＋MIR：IF M＋MIR＞37＊37 OR MHHIR ＜40 THEN 31 24
3115 NEXT K
3120 POSITION 2，10：？＂6；＂NOTHIHG HPS HIT
$\because F O R K=1$ TO SEA：NEXT K

－KEETUKN
35150 IF MG THEN 3539
3515 POSITION 2．10：7 W5：＂HIT A HIOEOUS」：FOR K＝1 TO SWO：NEXT K
3529 PUSITION 2．10：？＂
：RETUFN
353 POSITION $0.10: 7$ \＃ 3 ＂HIT A DERELY MO

3549 FOR $K=1$ TO 500：NEXT K：POSITION 0.10
3550 IF RWHD 0 ） 0.4 THEN 3563
$3555 \mathrm{BD}=\mathrm{E}[1+1$
3556 POSIT TON 4－10：？＂65＂beast is dead＂：
FOR K＝1 TO 5eroinext KiPOSITION 4．1ga？ ＊＂

558 IF 朋HIR＝B1 THEN ES＝1：G070 35620
$3559 \mathrm{B6}=1$
3560 POP ： 6070200
3563 POSITIUN 1．10：？6；＂BEAST ORLY HOUN ［201＂
3565 IF PH＋MIR＝81 THEN B1＝INT（RNDK O ） $337 * 3$

3570 IF MHMIR＝82 THEN B2＝INT（RNDK 日） $337 * 3$ 7） 4 12 IF fot $82 . \mathrm{B} 2 \times>^{-1}$－Th
3575 FOR $K=1$ TO 500：NEXT K：POSITION 0，10
3,10 ：7＊6；＂
3590 POP 1 GOTO 200
3600 FOR $A=1$ T0 50：50ull 0，100，12，10：FOR E＝1 TO 2GENEXT E
 ［EN＂
3649 SOUNO $0,200,12,10: F O R E=1$ TO 20：HEX T E
3550 POSITION 1．10：？制；＂you tit the mat den＂
3560 NEXT A：SOLNO 0，0，0，0
3670 GOTO 26603
3700 IF M＋MIR $\times(37 * 37)-1$ OR FHFIRく49 FHEN 3120
3710 AS M M＋IIR $: M+M I R)=*: P O S I T I D N 5,10:$ ？
＊E；＂HIT A HOLL＂：FOR K＝0 TO 15：SOUND B．1 50－K，12－K：FOR E＝1 TO 10：NEXT E
3720 SOUND $1,200+K, 10,15-K=N E X T$ K：SOUND $0,0,0,0: P O P$ ：POSITION $5,10: 7$ ：
： 10 UTO 260
4000 POSITION 0，0：？散5＂3＊
4010 FGR K＝1 TO 35
 0．160，12．16：FOR E＝1 TO 30：NEXT E
4930 SOUN 0，160，6，10：P0SITIOH 6，3：？复； ＂Yum yum＂：HEXT K
 HSE1S afte Tasty＂FFOR R＝1 TO 2GO：NEXT R 4050 POSITION 2．7：？＂6；＂a beast ate the＂ －POSITIOH 7，8：7 制；＂camsel＂\＆FOR R＝1 TO 3 BO：NEXT R：COTO ZURO
4500 FOR $\mathrm{F}=1$ TO 20：POKE $755,4:$ SOUND 0．10

## ATMHI SDOMOO FROERLAM

0．12．10：FOR E＝1 TO 10：MEXT E：POKE 755．2： SOUND 0，280，12．10：NEXT A



4539 POSITION 1．5：？6． $3^{\circ}$ \％he man was eate


4549 FOR R＝1 TO 2003NEXT REEOTO 2000
5001 IF BO＜2 THEN RETURW
5003 F＝F－1：IF $F<\Rightarrow$ THEN 5500
5605 IF DP－37＜38 OR DP $+37>37$＊37 THEN 564 B
5018 IF $A \leqslant \times D P-37, D P-37)=$＂ $P=: \quad D P=D P-37: R E T U R N$
 P $: D P=D P+37:$ RETUNON
 $=:=D P=D F+1: R E T L T N$


$5000 \mathrm{~F}=F+1:$ RETLIN
500 POSITION 0．0：？＊6：${ }^{\circ}$
 he damsel died of＂：POSITION 7．6：？＊5z＂mu nger－
5529 SOLHD D， $\mathrm{K}^{2}=10$－10：FOR E＝1 TO 10：MEXT $E=501 N 0$ 0，K＋55，16，10：NEXT K：SOUNU 0．0，B． B：EOTO 200
GQud IF B5＝1 THEN 6100
 30， 5040,6050
$6020 \mathrm{B3}=\mathrm{E} 1+37 \% 60 \mathrm{TO} 6850$
E034 83＝81－37：G0TO 6E68
$6040 \mathrm{~B} 3-\mathrm{B1}+1: 60 \mathrm{O} 06060$
6050 B3 $=81-1$

 ：A
6065 E0TO GQ89
6070 IF $83=1$ THEN 4500
6015 E0T0 6160
6089 IF A 5 B3，$B 3$ ）$={ }^{*} K^{*}$ THEN 4000
C0Y5 B3＝B1
6100 IF B6 $=1$ THEN 210
 30．，6140．6150
6120 B4＝82＋37260T0 6166
6130 B4＝82－37：60T0 6160
6149 84－82＋1： 60706169
$6150 \mathrm{~B} 4=82-1$



6165 E0T0 6184
6170 IF B4＝I THEN 4500
6175 GOTO 215
6180 IF AS $184, B 4$ ）＂K＂THEN 4000
6195 B4＝82： $60 T 0$ 216

5，8：If MS THEN ？＊6；yes＂\＆EOTO 702も
7015 ？制；＂no＂
7020 POSITION 15，9：？W6， 20
7025 POSITION 1，4

7040 IF（DOHX TO 76TE
705日 IF（ $[\mathrm{PP}-M$ ）$)-1$ AND（DP－ח $\times 38$ THEN ？ 6F＂－EAST W：GOTO 707
7050 ？${ }^{6}$ B $^{n}$ HEST＊


7070 FOSITION 12．4
 07120
 707120
7109 IF（EP－M）－ 1 ANO（EP－M）＜ 38 TH테 ？＂ 6；EAST $=60$ TO 7120
7119 ？制：＂HEST＊
7120 RETLRN
BGEO POSITION B，1：7＊6；＂3 MARE POVENTU RE EPOSITION 2，7：？6；＂spears left
8920 POSITION 2，8：7＊6；＂darsel found＂：P OSITION 2．9：？6；＂beasts dead
8030 POSIT ION 1 3：？WS＂DARSEL＂：POSITION 12．3：？ 6 ；＂EXIT＂
8040 RETURN
 N 9，4： 7 制；to＂：FOSITION 3．6：？6；＂maze adverture：
9020 POSITION 4．9：？＂6：＂PRESS START＂
9038 IF PEEK（53279）$<6$ THEN 9030


9510 POSITION $2,1: 7$ 散；＂you do not have＂ ：POSITION 7，3：7 ${ }^{6}$ ；＂enough＂：POSITION 7，5 ： 7 帾：＂SPEPRE＂
9515 POSIJIOH 4，7if 髟；＂to complete＂：PGS ITION 2．9：？${ }^{6}$ ；＂this adventure＂
9520 FOR R＝1 TO 500：NEXT REGOTO 2000
 ＝P＊256：FOR M＝8 TO 1023：POKE M＋N．PEEKく573 44＋M）：NEXT M
10010 FOR $P=1$ TO G：READ D：FOR F＝O TO 7：R
EAD R：POKE O O 8 ＋F＋N：R：NIEXT FSNEXT A：POKE
$756, \mathrm{P}=$ RETURN
18029 OATA 1，255，8，237，237，237，10，255，255
16230 DATA $49,6,126,129,129,129,129,126$ ， 8
10040 ロЯTA $43,28,28,8,62,8,28,28,62$
16050 DATA $3,6,6,40,20,40,20,0,6$
10360 DभTA $4,0,0,0,8,28,8,0,0$
10050 वnt $42,0,65,90,50,90,126,165.165$
10160 DคTA $30,9,0,0,0,8,6,0,0$
10110 GATA $29,24,36,24, \mathrm{BE}, 96,24,24,36$
19128 DATA $28,64,64,95,80,72,68,255,255$

## SOFTWARE REVIEWS

## Computerised classics

## Our review panel takes a look at some traditional games that have had the computer treatment

## Knight's Move oric 1 £ 4.95

HTL Solwere, Lock Streen, Savie Tawn, Dewshury

These two welt-wruten fermity games, retaing at lest than ES , represent sood value for Oric owners.

Hoth programs Inaded rapialy and wuhout any problemis, bul itcarparated a novel load check lacility just in tase of dufficulty. Also impressive was the sumeiul HTL loys on the siget of boilh prosrams.

Yaluzi is the ritandard due game for two to etght plavers th wheh the am is to be the first to achosve a sel of dhe combana-

Olk.
The program does everythnu
tor you: "1hrowst the dice. tor you fores and provides you with an corscrem remmder of the com. ginatsols you need, and the passibilates in your throw. Knught's Move us board garme or up 10 five pleyers. The object for up 10 five pieyers. he kne of
is to swep 1wo sets of kighs of different colour urimg the chess knight movement of the pites
Not only is the mumber of moves taken importan, but also the time taken

It may require fast thurking but once phayed a few times, you mut fy find that the object is may fond that risely castly, and the appeal of the earme is lost

## 11.1.

insiructions
playabulity
praphtes
vahue for money
$70^{2}$
$500^{5}$
$\mathrm{SOF}^{\circ}$
9ner




## Pinfoall/Cubits

 Th-99/4A (Extended BASIC) E6hzard Cusmes it Br dgewond. Brachstide. Telterd, Shropshire Y131LY
Pinball is an old arcade tatomine, ard this terston is a lanthut recosdation for the for
Three ball- are pros ded for each same, the obicet bevicitar bettet the curtent 2 gold $d_{+}$an ex each 2,000 points s
ts only real cr I.-Nm is the thote o kevi 1 and 0 in contrul thene and righ finper thos lett and regh ace dental quil ting of the prageram by plasers unt dmhar with the kesparad

##  <br> cricherbarts <br> (amos. <br>  <br> terncer on the the <br> 





firstery bo the anotperse teme is




## 

By Dragonttec, Mrom Stret, Software, 7 Merndsey. k ir 100 oin-Lis DN21 4PH Gatinsborough Lacs Another implementation of that hourd game favourne, Rame.
Othelho by any other mame-
No instructhens whre huphang with the ceview copy
 pater the thowern of twesk af dif
 tranmal the anmpuiet
dgatar the compurnar with the game mivelf 1 had to wonct a inctad who is for the sules learm that the oblent opponem's is 10 "teserve voltour by placing your piesey in appropitile squares.
dethe score for
के witer
depends sore for each ball ported irame humherts tiknorn the山isane dheratiom, they mint boe perut macte midu they Firthe the perif pore fials
oukd be a better chosce Cubits is a gance for iwo players in which 10 rows of 13 covered drce are artinged acrerm he suren Each player int with serects two dice to uncowet with the purpose of matching the numbers

If a mateh is made 10 monms are ewarded and the player hads are awarded and There are spos 1,3
 The game ends when all due are ath had, the winner berng the ald er with the highest werre
The game is well ermer lapyer and lisas gend graphici bui evtr tuall trewores edients An May Could there not be optons it ${ }^{\text {th }}$ tong or shert sames

## instructions

playgbility



Sone umjure complat tratian
fremer of ther 'eatione




 wou must latithe soing and wis of


CDS has produced a ver
Hande wrd

 whound a miatract whob lise tou
 the marker s porsif mone fowd he wheleted venkth or the
 are viade to the chatgeres have


plecse send the the 10.50 wing Anithatorll

## gurun monto

Longer intorivic201 elades

#  

## SPECTRUM GAMES

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As for the Commodare 64, buf how matatble for the *ih Specirum, Texes $T 1$


## VIC-20 GAMES \& LTILITIES

## JACKPOT

This is the ult thate Frum Vsihare for the \$1C wilh nudge hoid and rear of
 superb graphtis. antmatat and wet af colzur in fail, that pesgram mathes
 Compuling Weckly No $2019 / 7,83$
65.5

Atcuraty and apeed ere required for thas Shewinf Chaters sumerb une of valizur
 machine code, joystmek or keyboard forptrof

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 ome for you, for the $\mathbf{i k}$ expanded VIC only, (atalatic Nom: 55 so

CNAKL ByTE






 uvord bumping into bin or ths sutden death' Aht or peast womphene and challensiny pame

MIVI-R(IULATTE - PUNTGON - IIS-LOW
 Iu tolerur, sult ideltes sand tanes

## COMMODORE 64 GAMES \& LTILITIES

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A parne for sp to fouf plavers, an sou lead he parts of vatur shatuc and wim he



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## 2X81 PROGRAM

My programdisplaysa board and the moves for iwo people 10 plas noughts and crosses i have ured he graphies of the $\angle X 81$ to pro duce large eflective displidy which makes the program ill teretting
spectal iealures of thes pre gram are
－The use of the whale screen to draw the board
－The coordinate desudisg routme lines 293 and 254
－The use of array $A^{\prime} 3,31$ ， zheck va．ud moves
－The use of Indey Gio deriermine whith player gues．It is Lome 274 Which etlectuely shanges G to ］ or 0 opposte lo ats prevent value －I me 2 （n）whath calvalater the posiloon by Iwo simple lormulat and pruss X or O tanleg Boolean logic．this い小心 imo If THIL Noms
Whent voll hate elllered the programt spe（a）Jo 2010 to SAbE al fixll hest anow rom on subsequert leadings

## Hints on coaversion

 This progsam can be converred etsuly for the Spectrum．In fach， the only line whuch needs chang ing is lne 253 where he CODE of （Sil）needs－ 63 subtrested if the machuse is un CAPS LOC A mode or runus the code number of the lower case Speetrum sharmeter ＂ a ＂minus oneOf course，usnng cotour and sound will improve it even more Conversion to compulers other than Sanclar may need alierang on the Buolean hegse und the flags．probably usins -1 un－ stead of t．Apary from thal the graplitss and sharaciers ure tarls siandard

# How to get cross with your 2X81 

> There are some neat programming techniques in this version of the old favourite，Noughts and Crosses， written for the ZX81，plus RAMpack，by Simon Matthews

## IDUEHT5 CRO55E5

BY B．P．MATTHEUS．

How the wreen lowks before the way ol a game


## Variables

$X$ number of wins by $X$
O number of wans by 0
D）sumber of draw
A $\mathbf{3}, 3$ ）compuier beard to theci
valud moves
C：flag， $1=\mathrm{X}$ turn， $0=0$ turn
（ 5 posalem inpur
A honzonlal position of X （y） O B vertical position of $X$ or $\Omega$ 45 score inpul
C．5 wart $X$ or $)^{3}$ inpull
Inverse sharacters gre：lime I STAGE ONE．INSTRLC TIONS AND IRII．LS，5－7 I＇RLSSSTOP ON YOURTAP＇ RECORDER AND PRESS ANY KLY TOCONTINUE， 68 STAGL THO MAIN XCRIIN DISPLAY， 245 STAGI IHKLE．NAIN PROCIRAM
 KORL BOARDANDBIS PILCES， 695 and 9010 I6 pairs ot treater than and less Ihan sym沁小 ca，h

Vulughts and（rower：in ettoun


## 2X81 PROGRAM



응 PRTNT RT 1,$12 ; " S C O R E S Q R R O "$ 93G PRINT AT E, 1: GGAMES WON EY NOUGHTSN." 0
CRUQ PRINY RT 7,1;"GRMES WON BY
 -

Y TO RESTART QAME" THEN SOTO 9TE 98 GOTO 64
1090 PRINT AT 4, 9 ; "UHO UILL STAR 1G9G LET GBEINKEYS
 00T0 1618
1636 LET G튱
1046 IF G央च"X" THEN LET G\#1 $\begin{array}{ll}1850 & \text { CLS } \\ 1 & 0.8 \\ \text { RETURN }\end{array}$
 2G18 SAU

Christine
Computing

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## EPECTRUM SOFTWARE REVIEWS

## Lord Harry and Lady Harriet

lotus-Soft, 43 Maes Road 1 langernech, Llanell, Dyfed SAl4 BUH

One game, Iwo characters. If you wish to control Lord Harry load slde one or load slde iwo for Lady Harries

The game is identical for both players. You are an a group of four gardens each connected by gates hall way along the fout sides of the screen

Each garden is set up with umpassable rees. lethal pools of water and edible muthrooms

One of these mushroons is poisonous and, afer eating it, you only have 98 seconds to find the exar Fortunately thas mushroum also expands your $m$ nd and allow

A nuce layoul of keys which give you some choice, responssue control, fast action and a chailengung game which is made harder by the presence of two in dessructable dogs which chase you. The cassente insert is micely printed and contans full manes thons
What is special about thus pro gram is the character graphacs These attemph, farrly successful ly, to represent humans. The effect us simslas to the early line cation film characters, but nevertheless marks a step for ward from aloen creatures. roboss, pacman and other indistuct beingy. R.E. instructions $94 \sigma_{6}$
playability graphics ralue for money $91 \%$

## mnmis Trouble ES. 50

Durell Sofiware, Casile Lodge Castle Green, Jaunion som: JAl AAB

Get axe, jump tiver on steppingstones, cut down torest, swing over flaming pis, jump widening chasms and fuat for home
sounds simple but...If you don't gel the runtup just right, in you po! Wish luck, you can fun back to the bank, thungry crosodie jaws shapp.ing at your bollom
Chopping lzees quickly blunts axes and it's back aiross the fiver for another
And the 'blooming menkeys' keep stealing your axe. You can k.II them with a sharp axe if you're quick - I only managed face
Fal.ing rees san ru.n your
heath, swenging the pit needs judgement and hesitation thereafter makes cleanomg the thasm unpossible
The display is divaded anto four, Monkeys and Spare Men sal al the bottom, next comes the river, connected to the forest by a ladder, and anolhes ladder con nects the forest to the put and pinal Jump
The graphass are fun. Thees monkeys and three men parade wilh ceremony, and there are some nice touches of humour
tour Speeds of Play - No. contusingly beng the fasiest movement by rursor kevs - a
rimnirag score is displayed and there is a hall; of lame inseructions pacastillts graphos value lor ntoney

1 and
t.t.t.t.t

## Bormy Burgers 48K 5.95

## Blaby, Cros5ways House. Lutrer

 worth Road, Blaby, encesterBarmy Burgers is an unterestug Bud noved pame. On tach level here are parts of three hamthere are part on cheese, letburgers - the sop of the bun By walking over eack part, you nock themt down to the next knock thent downtly here are level until evensuaig three complered ourgers the bottom of the screen
You are pursted bs iwo Prankfurters and a pecular whute object - but they often seem to be in a stare of paralysis, You are armed only with a pepper pot armed ond your opponent due, but fire and your opporent de,
you omy have enough pepper to hast five bitacks Once you have completed
three hamburgers you mose onto a new stage with shorrew pepper faster action. and

## pur

The graphics are aserage with the exception of the pinman you control who has leks only a contortuonst would be proud of - but thes are far from smoorth The sound is good though, and enhances the game considerably.
considerabily. No nasturis opy bul the -ur wht the revich copy, tive are used sor keys and 0 to fre are uscals) The ganse restarts automaticain - an annoylsig feature
mintructions playabity graphics valut for motit?

## Pheenlx E5.50

Hegadodo Soflware, 16 While Hislands 872 Coldfried, Whate Apari froms the grievome sell ing of the the griestame spelf programinies of thas is a sery cor sional fromeg. bughty profes Equrphed trart to fintith prosesand wheld, woth a baser-rannon bome diopparig bird of askrids: Frical tices. Whath of tartous halwher yore talue exer hr brds. and ours into event thote shap and thatho the mothere Pryprammed for bach ACF and Kempstand for bor boch AGF Thon to tite keyboard thatdr. gram bas escrithera, this pros uelomed cervthing buna graphics

 Hastang velected one af tive
 oar Speterum pasy mikdar. Ifice and reseals an wat fickal "is tan be diverensed wir ficla Chilates you ativensesi whdi if. Tiren tha atimet a whle Thon wesels are carefalls Iten al:



 are wo filld that youratr molle pue off slraight youms asers ate Fupcrob prest anta and shatidi freghation, graphucs ed wind haghy recomanima

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As a 'Tl owber, Mr Bletes (HCW 29) has my despest sympalhes I experienced the same problems in my direa when I firsi bought my 'rt,
Luckily, I discovered Galaxy Video in Maidsione, who are the man stockists of nearly all the books publishad on the TI,
They also stock a wide selecion of soffware bolh from Texas and independen 50vrces. They have owner's club, which produces a quarterly fourat. and you can join for modesi fe
They also produce a smalf mand order calaloyile, and you can buy the 99 er magazine through them
Secondly 1 Joined the Insemmetional Users Group, which is based in Bethany, Oklabutha. Thes produce in exiensive las of programs written by TI owners all over the world
The cily probsem is, you could find yourself having to pay imporl dutv and VAT of you buy them an ant quallit Iy. Alternaively, you cat buy listings for self entry

Mr Bales migh also consider contacting Stainless Softwate, who are in has area. They produce a reasonable amount of TI software on tape.

To the industry 55 it whole, I would say it "i high lime you took the T1- $\%$ / $/ 4 \mathrm{~A}$ senously It is far superior to the Spect trum and Dregon, and I'm sure thal when the new T 9974A his the shops, if wril ieave the Britsh machunes slanding
J. C. Manley, Rerthater, Kent

## We'll represent the Spectrum owner

We have noliced recently, in several of the computer magazanes, letters clatming that there is $=$ shartage of user groups for Sinclar iters. Apparentiy these users ive thot aware of our dwn grots which has members around the world
[SUG was formed as : result of the deraise of the former, well respecied N . Itonal ZX User Giroup.

We would like to dispe thas masty rumour that Simslair users are wilhout representation. At lbat is needed $x$ a letter to us at the above address - a slamp Гor the reply would be apprectared, (nor an S. A E) thts will bring full detaits plus an appication form.

## Send your letter to Letters Home Computing Weekly, 145 Charing Cross Road, London WC2H OEE. Don't forget to name your computer - the best letter could win e5-worth of software. Queries cannot be answered on this page



We weicome applicalions from both seasoned veterunts and newconters alike, so let's hear to more rasly talk abour non-representation.
One major attractoon for out members is os suarantesd $30-5$ stitne on a 200 or so commercial programs.
P. Paton and V, Webber, 1st G. 176 Todmorden Road. Burnicy, Lancs HEll 3 . t

## Minesweep by Joystick

Hete"teneasy way toconvert the controls for ihe VIC-20 Mine Sweeper game in HC'W 25 to joystict control.

Remove tirnes 25 and 30. and replace them wilh the following
21 POKt 37151, 0. PA =
37151 PB = 37152 R ${ }^{3}$ 37144
$22 \quad \mathrm{~A}=\mathrm{PLER}(\mathrm{PA})$
POKt RE.177 B=
PEEK(PB):POKE
R日, 255
24 IF (A AND 4)=0
THEN $\mathrm{D}=\mathrm{D} \cdot \mathrm{I}$
$25 \quad I F(A \quad A N D \quad B)=0$
THEND $=D+1$
Granl Benaelt, Brightan, Frat Suncex

## I'ma satisfied Dric customer

As a regular reader of your maganne simce its incepion, I have noliced a lor of letters throwne brickbents at miero mantifacturets. And as an Otic owner, the letter from Kesth Ollet1 (HCW 25) caught my artention parIcularly
May I suggest Mr Oltett's appromich to One may be at fault?

I recenved my firsi Oric in Wasch. The machme suf fered from the well-known carly Otic problems (wobly picture with sound, poor col. ours erc).
( recelved a replacement machure after only one ielter to Oric - ज्ञnd not only a machuse, but free soflware
compensate for the InsonveBletice

Unfortunately, efter a time the raplacemtens tod developed a faulı. On ringing Orce at Ascot, explaning the problem, I was promised a replecement. The new machune arrived three working days la/er, again with a bttle "exirat' by way of compensalion
[ have always been trealed courteously and prompty by the stath at Oric, and would like through your columns to thesk Oric and parucuinfly Miss Nicola Hughes for an excellens service.
M. La, Emery, Rupby, Wer= wieles

## Chip on the shoulder?

1 decided to wfile to yous after reading about the new ULA chup Sinclar has put into the Series 3 Spectruttis (HCW 29).

1 own a series 2 Spectrum and a Grumals TV, and you can guess whal my probiem 15 - yes, you've gol il, they're incompatible.

This is somelbug that was rarely pounted out of poten. tial purchnsers. The only way I sin set a colour ⿷ereen display for my Spectrum is to go oul and buy a new TTV
I thask it would be farer of Sinclar 10 offer series? owners with this problem: new colour chip - I myself would even be prepared to pay a token amounl.
Surely this problem cotuld have beth pulaght following the launch of Sctues 2, A tiep all, were Ihts the car Industry, there would be a recall wih no cliarge to the customer Mind you, by Sinclalr's delivery standards, thai would teke forever.

I'm unemployed, and cannol afford to go out and buy extra TVs at a cost of at least E 110 each. To me, ft perms like anothe case of take the money and min, and I wou d certanly tike to nominale Sinclair for a compter cow pa! !

Jim Wered, King Healh. Burmingham

## Beat thati

O.K. you guys? So you 1hank you're good! 1 challenge you to beal my friend David Willmer's score of 169,990 on Interceplor Macro's FROGGER

Beal thal fyou can took ham forty munutes using my Commodore 64. Is David the World Champson?

Julian Courlinad-bmist. Hestinfs, E.ast Sussiex

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## Top Ten programs for the Spectrum

```
1 Scrabble
2 The Hobbit
Met Pac
Horace and the Spiders
Tranz-Am
    An Oiddums
    Super $py
    Horace Goes Skung
    3D Desart Patrol
```

    Compilod by W. H. Smith. Figures in brackets are gast
    Psion (2)
Melbourne House \{3\}
compilad by $W$.
week's positions

Top Ten proyrams for the ZX81
Sinclarir (3)

Flight Simulation
Footbsll Managar
Space Raidors Ship of Doom Scramble Astaroids Chess Espionage Island Dafendar invaders ind by Boots. Figures in brackets are lart week's

Addictive (4)
Sinclaur (2)
Sinctair $\{10\}$
Quicksilva (6)
Sinclat 17)
Sinclair (1)
Sinclaur (8)
Quicktilve (9)
Ouicksilve 1-1
positions

## Top Ten programs for the Dragon

| 1 | Frogger | Microdeal (2) |
| :--- | :--- | :--- |
| 2 | The King | Microcleal (1) |
| 3 | Shuttle | Microdeal (-) |
| 4 | Android Attack | Microdesl (3) |
| 5 | Space Wer | Microdeal (4) |
| 6 | Ring of Darkness | Wintersoft (6) |
| 7 | Nightflight | Salamander (5) |
| 8 | Gridrunner | Salamender (-) |
| 9 | Morocco Grand Prix | Microdesl (9) |
| 10 | Dragon Trek | Wintersoft (10) |

Comprlad by Boots. Figuren in brickets are last witk's positions

Top Ten programs for the VIC-20

Compaled by Boots. Figures in brackets are hest week's
Imagine (1)
| Arcadia Gridrunner Wacky Waiters Skyhawk Panic Matrix Catcha Snatcha Cosmic Crunch Frantic 10 Asterouds Llamesoft (7) Imagine (2) Quicksilva (3)
Bug Byta (10) Llamasoft (-) Imagine (5) Commodore ( B $^{(1)}$ Imagine (9) Bug Byte ( - ) positrons

## zap 'em Up while you learn typing

One of the best pragrams avalable that can be used to teach you how fo type is colled Typing Tufor, by Microsofl. When I got my Apple. I used if to teach myself typing - I could never be bothered wuth a convemtional typewriter - and wuthin a month or so neached 40 wards per minute wuth high accuracy.

The nice thing about Typing Tutor is that it is customized for the particular machme on which the program runs. Unforturnately, thes prosram is not avalable for mast of the low cost micnos currently on the morket.

Now there is such a program. $H$ is called Master Type, and is marketed by Lightning Software, of Pato Alfo, Caljfornia Contrasied with Typing Twor, which is basticalls a sefses of drits, Masser Type is as much a video gome as it is a learning exencise. If comes in the gutse of a space inek/astenouds game. The progrom is wery simple to use.

You must hit she correct keys to move your space craft, avond its beng hit, and to shoof at the asterovds. Durng the gome, words and messages flash on the screen to help you Jearn the keyboand and impnove your typing skills.

Although I suppose if could be used in the office as a tenston neliever and skill improvement add, its designers cleariy meant kids to be the primary marketing target. The author is an ex-feacher who remembered how hard if was fo get kids fo pay ettention in order to tearn. In this tutoriad, such aftention getfang is bult-in.

Even though the first version was writsen for the Apple, the pnogram is now avalable for the Atand 800 series, the IBM PC, and wall soon be avatiable in a version for the VIC-20 to be disfributed through Broderbund Software, of San Rafael, Calfornia

The program starts out in a conventional manner, teaching the "home" row keys, first for the left hand then the right. Once the student is haghly successful, the game becomes more complex. Included in the prognam is a 50,000 -word dictionary which allows the prosram to demonstrate and remforce spelling concepts (e.g. the I before e rule). Overall though, the turanal/game has one fundamental princupie: hit the correct keys or lose the game.

When the iypst becomes a master of the keyboard, she program begins to teoch elements of progromming in BASIC. The outhor of the program felt that sunce BASIC nequires much mort effort and concensfation than "Just"' leaming how to type, this was best left fill last. Thus the program follows a very sound prnctple of educetion: proceeding from the simple to the complex.

Does if work? Apparently If does. Parents of chidiren ar young as five have writen the company unsohcted testimonsals reporting that their chldren have used the program successfully, even though the firm feets thaf a more typical startang age is itkety to be seven or eight. The screen displays and documentation ore dessgned so that parents need only spend a few minutes whth ther children to get them going.

The price has not been announced for the VIC- 20 version. However, you should be able to find out through any firm that selfs the Broderbund the. I am sure it will be well worth it.

Jomf ventures in home computing soft ware are becoming another \#ngmficant factor in the marketplace.

For example, Texas Instruments and Imagric have agreed on a long ferm cooperatrve plan to develop educational and entertanment soft ware for the TI-99/4A. This should result on at least seven new products the first year, including the popular Demon Attack, Microsurgeon, Fathom, and Flap! A'I these gomes will use vorce symthests, developed by TI.
That's it for this week. See you next time,
Bud lzeen
Falrfield, Callfornia

With the launch of the larest Sinclatr product, home video enterlamment has turmed of full arcle. It stated with the video games machure which threatened to turn tnany homes finto games arcades.

Next carne the home computer. Although mainty used for playing games, they could be justified as being educational, and having some 'serious' uses such as home finance control and keeping records.

But now you can buy the 2 X Interface 2 whish will zurn your Spectrum computer into - video games machune?

This interface provides your Spectrum with two extra facthties; it port for plug-m ROM cartridges, and seckets for two joysticks.

Joysucks are not included in


Close up of the Interfige 3 - that edge connector megh cause trouhik in the long run
the $\$ 19.95$ price tag of the interface, 50 you with need to get two joysthcks with the standard 9 pin D-plug (s.g. Atari) to complete the system.

The Interface 2 makes a most unatractive uddtion to your Spectrum. When the odd-shaped box is plugged into the user port of the Spectrum, or the expansion port of the ZX Interface 1. 11 protrudes from one side of the back of the computer spoilng the olherwise siesk lintes of the Spectrum.

On top of the miterface are the two D-sockets for your joysticks. and a hanyed flap which hides the ROM cartndge port.

At the back of the interface is an edge conrector to which only the ZX praster may beconnected. All other peripheral devices must be connected berween the Spectrum and the ZX Interface 2 .

While joystecks shoutd need no introduction to most games players, plug-in ROMs may be unfamular to many Spectrum owners. The idex is to allow pro-
grams to be 'Instantly' looded inio your computer.

All you have to do is plug the ROM cartndge contanting the program into the socket at the top of the interface. This must be done with the power to the Spectrum disconnected otherwise the computer may be damaged. Once the Spectrum is powered-up, the program starts immediately
There is one further advantage 1016 K Specinum owners, Using the interface, programs which were 48 K only in the cassette verston will run on the 16k Spectrum as the cartridge version.

One thang is apparent when the ZX Interface 2 is plugzed into the back of the Specirum; nt suffers from the infamous 'Sinclars wobble' that afficts the $\mathrm{Z} \mathrm{\lambda} 8 \mathrm{I}$ plus RAMpack

Unlike the ZX interface 1 , Inrerface 2 is not locked into position. The edge connector at the back of the Spectram is the only thing keeping it ma place, so the interface will wobble if knocked, or the Spectrum is moved.

> David Nowotnik tried out the latest addition to the Sinclair stable

## Interface 2: what price instant loading?

on cassette and you'ill realse that instant toading will be expensive.

Sinclair promises to expance the range quite quekly, with applicauon programs (e.g. word processing) also jommst the range.

One exeuting prospect for mero emthusiasis is the introduction of alternatwe propramming lanpuages on plug-in cartrucges. I understand that PASCAL and Forth may be available scoon.

The ROM cartridges, in connmon with most Sinclaur products, are quute smell. They measure 2 in by 1 in by $3 / 4$ in by 4 m mand ars black in colour. There is a red llextble band which prolects the cartinge edge connecior, and look like the skim of a hovercraft!

Plugging in the cartidgecan be qute tricky. Even after some practece I found it sitil took several tries to get the cartridge edge connector in the right place over the socket.

However, onae in plece, the program worked peffectly every Itme.

The instructions are clear and conctse, ensuring thet the interface is easy to mstall and use, Advice it given to programmers who wish to uncorporate routents for joysticks inte their awn progratis.

While many games players wils want thes inserface for its joystick factlty, lexpect the price of the ROMs, up to three tumes the cost of the same program on casselte, will deter many Spectrum owners. The prospective purchaser should also consider the likely reliability of the mierrace - never a strong pomt of brand new Sinclair products.

In the interests of good review. ing, I hfied and genily shook the computer and interface whule a program was in operation. There was no crach, and the program and joysucks connmued to work.

However, I remember conductung ie sumlar test on my 2×81 and RAMpack (when are connected in a smmlar way). When new, it also passed that les, but affer a few months of use 1 had no end of troubles wsth 'white-ouls' (a sysiem crash resulung from an intermultent break th the connectoon between the computer and peripheral)

Will the $\mathbf{Z X}$ Interface 2 suffer from the same fale? Of course, time will tell, but the Spectrum edge connector is not much improved over that of the $\mathrm{ZX81}$, so it mught wear in the same way.

Sinclair Research is launching 10 plug-mn games ROMs with the ZX Interface 2. These will cost £ 14.95 each; compare that with the $55-E 8$ price of the same games

## Spectrum gets down to business

Can you really use the spectrum for business applications? Our reviewers tried out three programs that claim you can

## All-sort 51 $48 K$ E18

Alan Firminger, London SE24.R

There is no reason why the Spec trum should not usefully appcar in orfices, shops and workshops. particularly when the Microdrives and interfaces for good qual,h primets become generally arallabie

In such setures, most applica. t.ons will entail haadsling uata such as slock detals, invoricing information, masling lists and so on.

Usually in such casses the recurds will have to be seried to meet the needs of the user. Sor ting by conventional BASIC meihods is very slow, and th1s is where Allsort comes to the and of

A demonstralion arrs 1,210 with the packdge sorts each in nine seconds, which is pretty umpressive. A further demumista pressive. forted 20 records each with thon sorted
16 fields in literally the blink of an cye
ll to \& pily such an impressive program should be marred by a poogram manual. It woukd have poor manua, benefitied from the uncluston of workng exampie for the purchaser to follow, and a better chaser referen.ing ssilem between cross relerencing shem arpeat ing on sereen at varous slages The slyle is also a lirile odd. with phrases such as "The Spec. trum must be iti a condition ms switched on
Alsort is obviously amed at the farly expertenced progranmer, and despite the manual represents an almost essentinl addstion to the toof-kit if work is to

## stock <br> accounting and control 48K Spectrum E10.95

kemp. 43 Muswelt Hill, London N10 3PN

A good program, prow, ding re. order warnings, revaluation and petiod accoul primiout, nim erro trap Allows maximumi 260 crrouran mem headiges whth two stpe of neme (phase or sale) per perrod The aserage is 100 headings 10 irantations with a headmes number or sook hems of
 trantactions. Vou will to sereral spall the reeords on to seecra castertes 15 page mansal make
tron is all there, but the arrangement is nol simple A reference is nocuded per tratrsaction, wimish might have been useful to record mught have beters and inverce suppliet intuls ands only five number, but
chara. wish business progratumers a not templed by colour Flashurg fed in bank programs does nor improve adegressing does nor improve green on black suation and here becomes uiring
formal here becomes nombed every
The date must be enlese we same framsition, even if 1 s. . nd the as the previous enty, of a " program ised insead or a "
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HAVE YOU EVER HAD THAT DREAM OR EVER WISHED THAT YOU HAD "WON ON THE POOLS" AT LAST YOU CAN TURN IT INTO REALJTY.
THERE IS A SECRET OF "HOW TO WIN ON THE FOOTBALL POOLS" - IT CAN BE DONE. I DISCOVERED THE SECRET A LONG TIME AGO - NOW, FOR THE FIRST TIME I'M PREPARED TO SHARE IT WITH YOU.
HOW DOES THIS INTEREST YOU - I HAVE DOCUMENTARY EVIDENCE BY WAY OF POOLS WINNINGS DIVIDEND SLIPSi CANCELLED CHEQUES, etc; SHOWING MY PRESENT WINS ON THE POOLS AS FOLLOWS:-

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## A GRAND TOTAL. OF 8,201 (EIGHT THOUSAND, TWO HUNDRED AND ONE DIVIDENDS - so far), <br> 1 HOLD THE UNCHALLENGED WORLD'S RECORD FOR POOLS WDNS

I AM MAKING THIS VERY SPECIAL.
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Do por lor myune iell you rhas it is impossible to "WIN ON THE POOLS" - since i perfecad thy method, I HAVE WON REGULARLY for ove TWENTY-FIVE VEARS - proof them is is no 'flash-in-the-pan'.

1 hre CHALLENGED THE WORLD with ay recort of wisa and with all the evidence then I possels - NO ONE hit ever been able to scerps the Challenge - I KNOw NO ONE EVER WILL.
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1 now tnerde to give a limited number of people the opporturity of miking uve of ray metbod = perfeeted over 35 years and proving inself on EVERY ONE OF THOSE TWENTY-FIVE YEARS.

You will have noced detwity of my penonal techimements to far, er pives to you wowe.

A GRAND TOTAL of $8,205_{1}$ yes 8,201 POOLS DIVIDENDS, including 76 PIRST DIVIDENDS.
My Pools Winninge. Dividend slipu now number to many, thal they dill a very lorge tuincuse und will suind as my evidence of all claims un ANY COURT OP LAW IN THE WHOLE WORLD.

Taking int the pas 25 years into consideration, I have won ON AVERAGE over 328, (THREE HUNDRED AND TWENTY-EIGHT Pools Dividends EVERY YEAR - or - AN AVERAGE of over SIX DIVIDENDS EVERY WEEX for TWENTY-FIVE VEARS.
You tave my aboolute Guarantec of the complete Hulbenticity of every clam, sheque, document, tetrer, stc, contained bezein.

I do have lowing weeks, but ON AVERAGE my winnitgs show over SIX DIVIDENDS EVERY WBEE for the por 25 years.
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Many thanks for your symors if is all yon saty and more J.C. Lance.
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